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BOTANICAL REGISTER:

OR,

ORNAMENTAL FLOWER-GARDEN
AND SHRUBBERY:

CONSISTING OF

COLOURED FIGURES OF PLANTS AND SHRUBS,
CULTIVATED IN BRITISH GARDENS;

ACCOMPANIED BY THEIR

History, Best Method of Treatment in Cultivation, Propagation, &c.

AND

MONTHLY CHRONICLE

OF

BOTANICAL AND HORTICULTURAL NEWS.

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CONTINUED

By JOHN LINDLEY, Ph. D. F.R.S. AND L.S.

PROFESSOR OF BOTANY IN UNIVERSITY COLLEGE, LONDON,
AND THE ROYAL INSTITUTION OF GREAT BRITAIN,
VICE-SECRETARY OF THE HORTICULTURAL SOCIETY,
&c. &c. &c.

1839.

——viret semper——nec fronde caducâ
Carpitur.

LONDON:
JAMES RIDGWAY, PICCADILLY.

M.DCCC.XXXIX.

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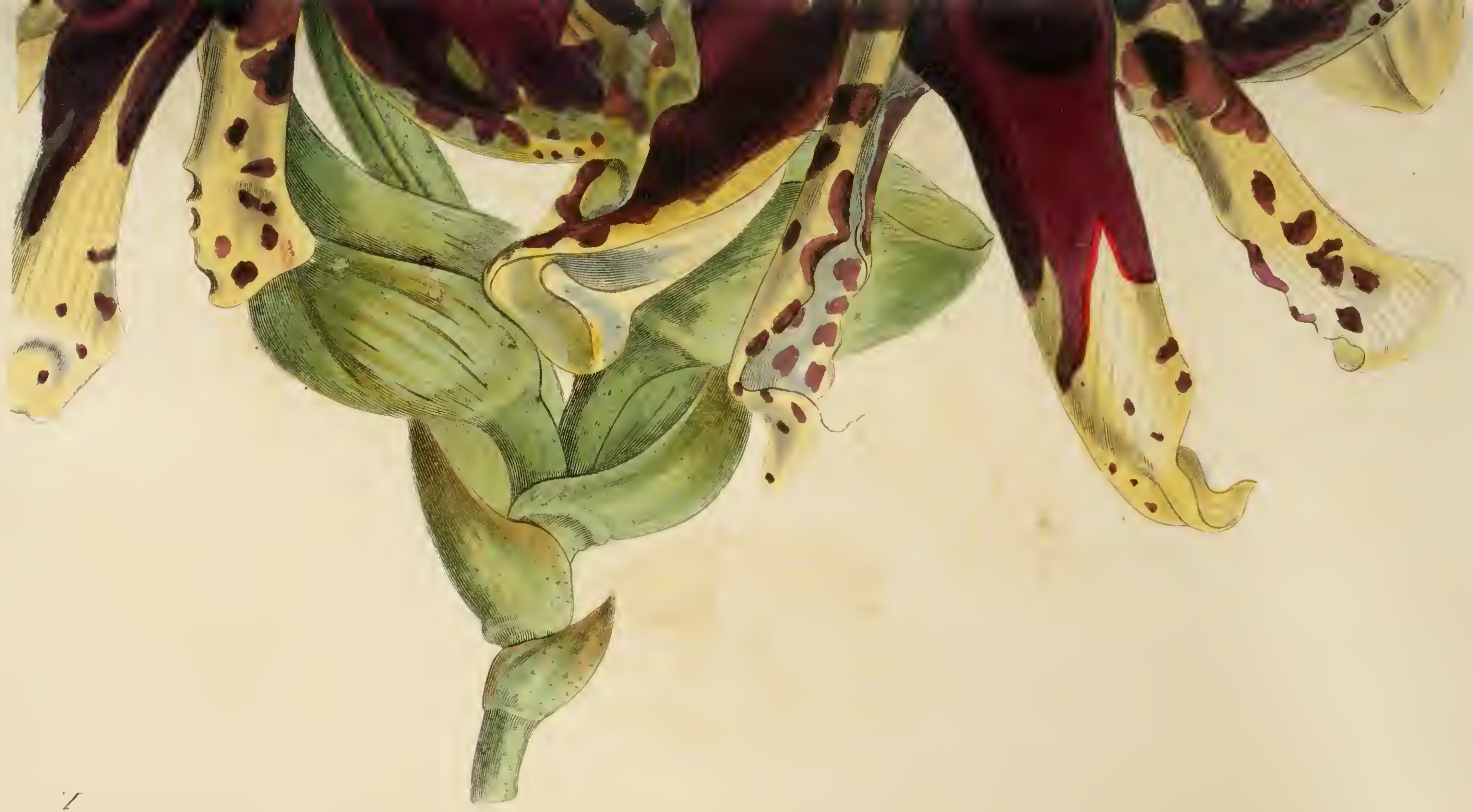
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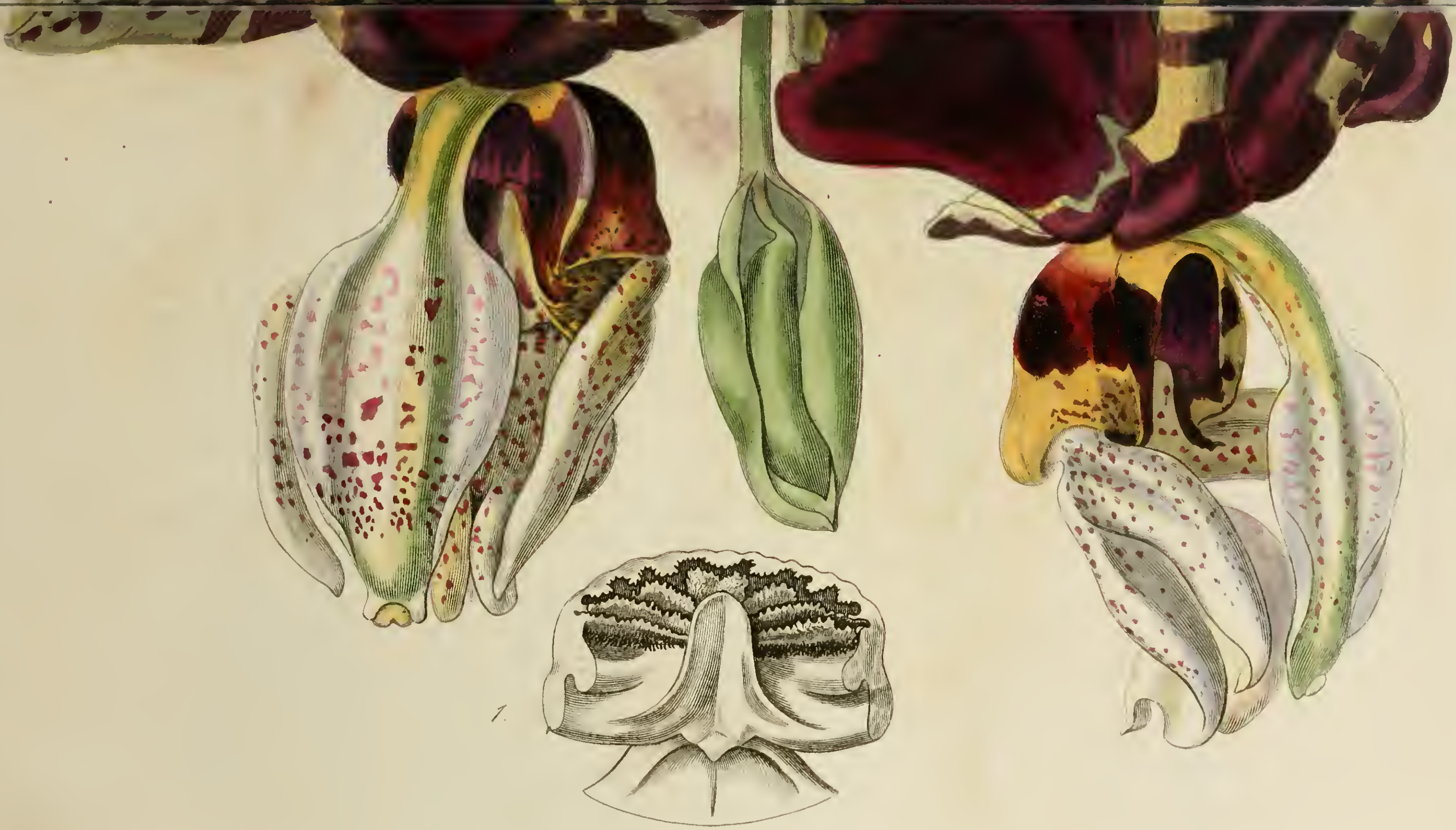

Miss Drake del.   Pub by J Ridgway 169 Piccadilly Jan. 1. 1839.   J Watts sc.

STANHŌPĔĂ tigrīnă.

Tiger-flowered Stanhopea.

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GYNANDRIA *MONANDRIA.*

Nat. ord. Orchidaceæ, § Vandeæ.
STANHOPEA. Bot. Reg. fol. 1529.

S. *tigrina;* hypochilio subrotundo intus lamellis glandulosis radiato, metachilii cornubus falcatis porrectis epichilii tridentati longitudine, sepalis lateralibus maximis subrotundo-oblongis petalis multò latioribus.
S. tigrina. *Bateman Orchid. Mex. et Guatem. t.* 7.

The species of Stanhopea are so much alike, except in their flowers, that it is rarely necessary to introduce their organs of vegetation into the description of them. It is in the flowers that their differences are apparent, and especially in the labellum, if colour is disregarded.

The present beautiful species is characterised by having the epichilium shallowly 3-lobed, in which respect it corresponds with no other hitherto discovered, except S. *saccata,* which is extremely different. The inner surface of the hypochilium will also be found very remarkable, being broken up into glandular lamellæ, which radiate from the base of a kind of ovate tooth which is itself directed towards the cavity they occupy. Fig. 1. represents this structure.

AUG 7 - 1923

The flowers of S. *tigrina* are larger and handsomer than those of any other known species, even exceeding those of the magnificent S. *Devoniensis;* this is sufficiently apparent from the annexed figure, in which nevertheless the colours are by no means so brilliant as in the plate of this plant in Mr. Bateman's magnificent work on the Orchidaceæ of Mexico and Guatemala.

January, 1839.

For the opportunity of publishing it I have to thank Messrs. Rollissons of Tooting, with whom it flowered in August last. Mr. Bateman states that it was originally imported from the neighbourhood of Xalapa by Messrs. Lowe and Co.; and that it is among the easiest of the genus to cultivate.

The fragrance of the flowers is very peculiar, resembling a mixture of Melon and Vanilla.

If this plant is cultivated in a pot, it must be raised considerably above the level of the rim, not only to prevent its suffering from too much water, but also that its flower, which is pendulous, may be seen with advantage. The best method is to hang it up in a basket. The soil should be the same for this as for other orchidaceous plants, but when put into a basket it is found useful to place a little moss (sphagnum) round the soil; this keeps it moist, and the roots seem to thrive in it. The only other circumstance necessary to be noticed is, that it must be kept perfectly dry when not in a growing state; it will be found to push much more vigorously when this is attended to.

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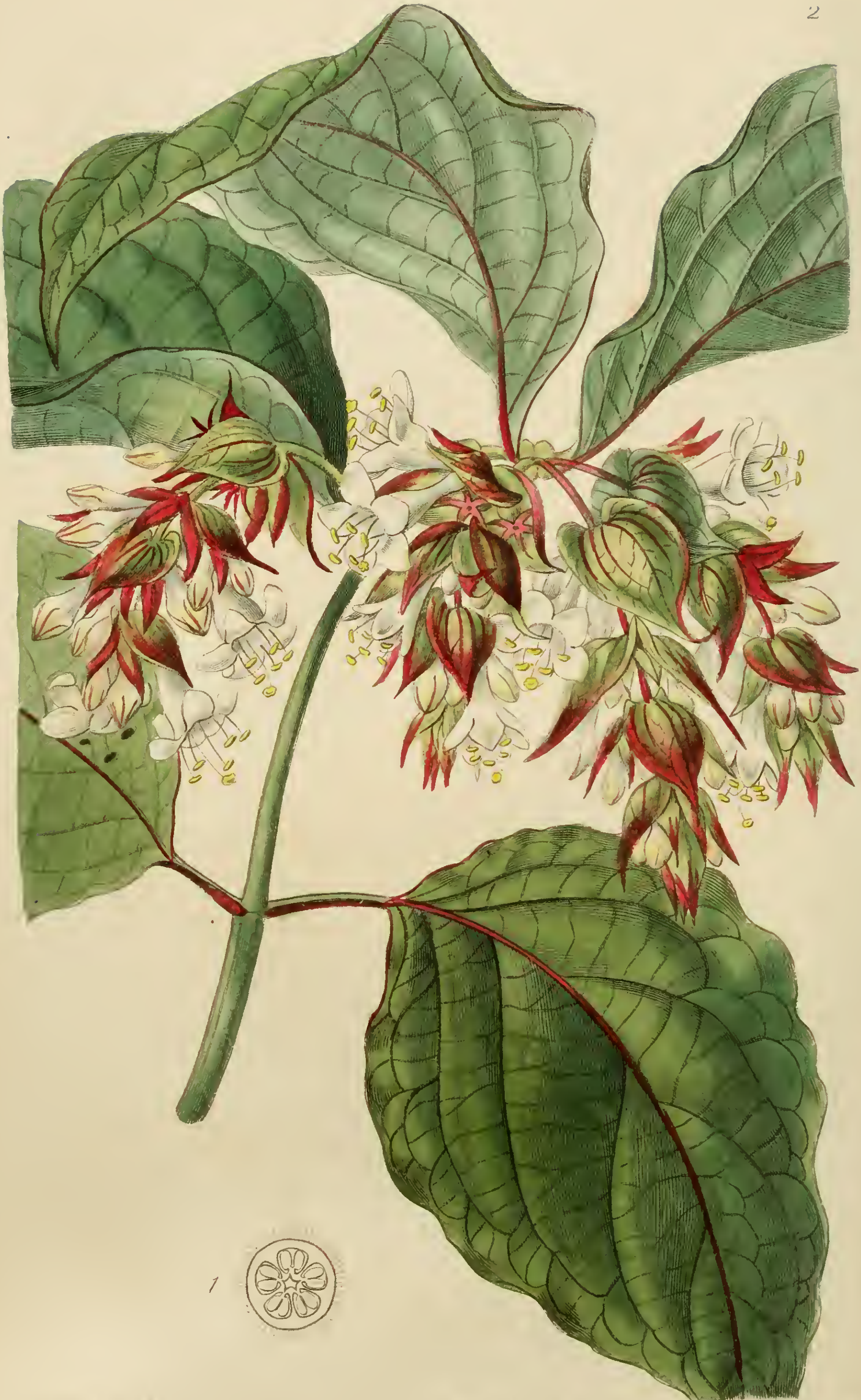

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* LEYCESTĒRĬĂ formōsă.

Beautiful Leycesteria.

PENTANDRIA *MONOGYNIA.*

Nat. ord. CAPRIFOLIACEÆ.

LEYCESTERIA, Wallich. *Calyx* 5-partitus, inæqualis, persistens. *Corolla* regularis, infundibularis, tubo basi hinc gibbo. *Stamina* 5, exserta. *Ovarium* 5-loculare; loculis omnibus polyspermis. *Stigma* capitatum. *Bacca* calyce coronata.

L. formosa. *Wallich Plant. as. rar. vol. II. p.* 21. *t.* 120. *id. in Roxb. Fl. ind.* 2. 181. *DeCand. prodr.* 4. 338. *Endl. gen. pl.* 558. *no.* 3335.

Folia *inferiora in surculis robustioribus sæpe tripartita vel triloba.*

"This charming shrub," says Dr. Wallich, "grows wild on the highest mountains surrounding the valley of Nepal, blossoming from April to October. I have also had it from much more northerly situations towards Gossain Than. According to my friend Dr. Govan, it is found in abundance at an elevation seldom less than 8000 feet above the plains, among the pine and oak forests of Bishuhur, as at Huttoo, and at Desoo in the Thakooraee of Kioonthul, blossoming from June till August, and called by the natives *Nulkuroo.*" The stem is said to grow from ten to twelve feet high, from an inch to an inch and a third in diameter. Berries dark purple, approaching to black.

Dr. Royle speaks of it as common in Nepal and Kemaon, as well as in Sirmore, at elevations of from 6000 to 7000 feet.

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* So named by Dr. Wallich after his friend William Leycester, Esq. chief judge of the principal native court under the Bengal Presidency, a zealous friend of horticulture.

From the account given of this plant by Dr. Wallich, and from the bright scarlet colour represented in that eminent Botanist's *Plantæ asiaticæ rariores* as belonging to the bracts, it was expected that this would prove a most ornamental addition to our gardens. But it must be confessed that it does not justify that expectation.

It has been raised in the garden of the Horticultural Society from seeds procured from India by Dr. Royle, and proves to be a hardy evergreen, capable of sustaining the severest cold of last winter without protection. But its leaves are a pale dull green, it has a rambling inelegant mode of growth, and the colour of the bracts is not at all brighter than what is represented in the accompanying plate.

It appears impatient of dryness, becomes yellow and unhealthy in front of a south wall, but flourishes in an exposure to the east or west. It multiplies freely by cuttings or layers, and will probably before long produce its berries.

Although not yet so handsome as was anticipated, Leycesteria may become more ornamental as it grows older, and acquires a larger size. The best method of improving the appearance of the plant will be to station it where, without being exposed to a very dry atmosphere, it is fully under the influence of light. If grown in the shade it is most likely to be a beautiful object.

Fig. 1. shews the appearance of the ovary upon a transverse section, with five cells, each containing a similar number of ovules arranged in a double row.

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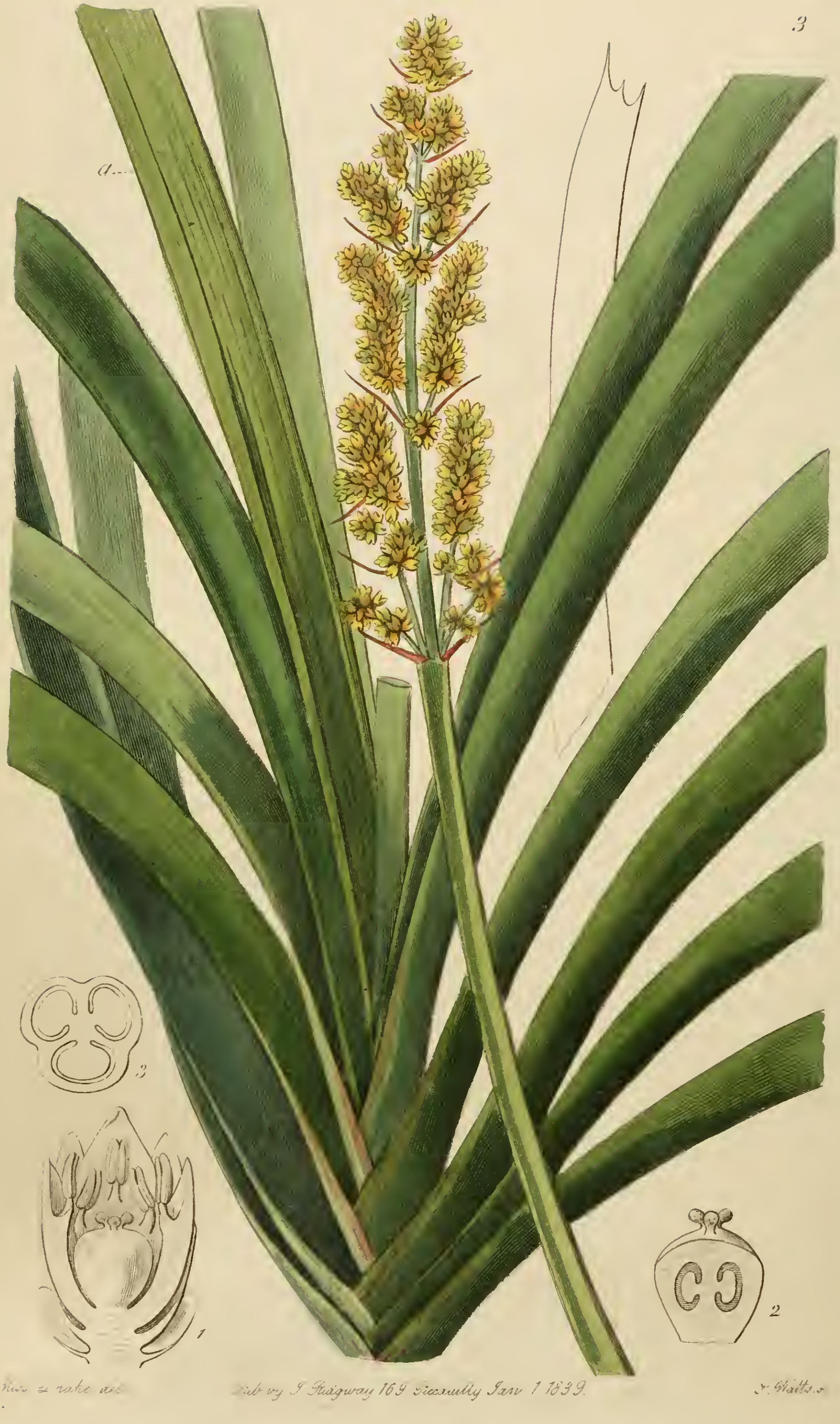

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* XERŌTĒS longifŏlĭă.

Long-leaved Xerotes.

DIŒCIA *HEXANDRIA.*

Nat. ord. JUNCACEÆ.

XEROTES, R. Br. *Flores* dioici. *Perianthium* sexpartitum. MASC. *Petala* tantum, nunc etiam sepala, basi connata. *Stamina* 6, perigyna. FŒM. *Sepala* et *Petala* distincta aut in cyathum carnosum connata. *Stamina* quasi completa, sed sterilia. *Ovarium* superum, tristylum, 3-loculare; loculis monospermis, ovulis peltatis. *Capsula* nitida, 3-locularis, 3-sperma, epicarpio ab endocarpio spontè secedente, dehiscentiâ loculicidâ. *Semina* peltata, *albumine* corneo, *embryone* intra basin albuminis cylindraceo.——Herbæ *rigidæ,* vultu *variæ.*

X. *longifolia;* acaulis, foliis elongatis linearibus coriaceis strictis apice eroso-dentatis: marginibus scabris (?), paniculis lanceolatis subcoarctatis; ramis oppositis, scapo planiusculo. *R. Brown prodr.* 262.

Lomandra longifolia. *Labillard. nov. holl.* 1. 92. *t.* 119.

Acaulis. Folia *rigida, dura, ensiformia, margine lævia, apice truncata et tridentata.* Scapus *compressus, tenuis, erectus, foliis æqualis, paniculatus;* ramis *lanceolatis multifloris:* Bracteæ bracteolæque *lineares, acuminatissimæ, rigidæ, ramulis floribusque longiores.* Flores *fœminei herbacei, carnosi; perianthio basi carnoso, bracteolis obtusis imbricatis suffulto.* Sepala *petalis paulo minora, in serie omninò externâ ordinata.* Stamina 6, *quorum sepalina petalinis paulò inferiùs inseruntur.* Ovarium *obovatum,* 3-*loculare;* ovulis *carnosis, solitariis, peltatis.* Styli 3, *approximati, clavati, apice divergentes.* Capsula *sicca, testacea, ovata, nitida,* 3-*valvis, loculicido-dehiscens; epicarpio cartilagineo separabili reflexo, endocarpio duro ligneo contractili.* Semina *pallida, oblonga,* albumine *duro, corneo,* embryone *cylindraceo intra basin albuminis latente.*

This plant is a hard, dry, evergreen-leaved, herbaceous plant, exhibiting a state of the Rush-tribe when they assume a state materially different from that of their type. It inhabits Van Diemen's Land, where it is common in various soils throughout the colony, forming large tufts. Its leaves are quite smooth at the edge, in which respect it differs from the definition of Dr. Brown; yet I presume it must be his *X. longifolia*, for he says it is a native of Van Diemen's Land, and I have seen no other species among the rich collections formed in that colony by Mr. Gunn (whose number 336 it is), and others.

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* So named by Dr. Brown, from ξηρος dry, in allusion I presume to the aridity of the foliage.

It is a plant of no beauty; but its leaves are so hard and tough, that it deserves enquiry whether they will not yield a fibre capable of being advantageously manufactured into cordage. I know nothing which in the unmanufactured state promises better, by the powerful resistance offered to the force employed to break it.

In this country it is a half-hardy herbaceous plant, which will grow in any soil and under any circumstances, and would no doubt succeed in the most barren places in a mild country.

Why Labillardiere's name of Lomandra should have been changed to Xerotes I do not know; but as Xerotes itself must certainly be broken up into at least two genera, it is to be hoped that the original name will be retained for this.

Fig. 1. is a vertical section of a female flower; 2. is a vertical and 3. a transverse section of the ovary.

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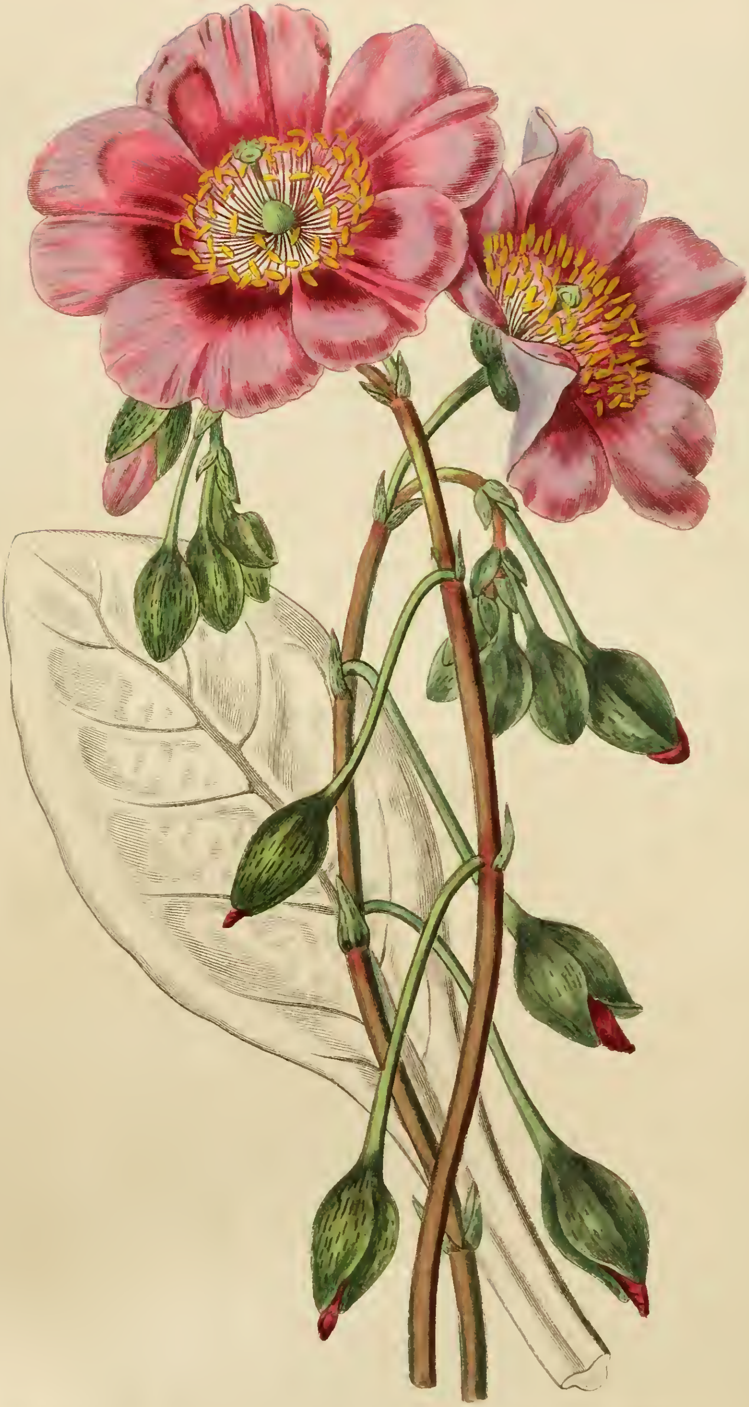

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* CALANDRĪNĬĂ dīscŏlŏr.

Discoloured Calandrinia.

POLYANDRIA *MONOGYNIA.*

Nat. ord. PORTULACACEÆ.
CALANDRINIA. *Bot. Reg. fol.* 1194.

C. *discolor ;* caule suffruticoso, foliis carnosis obovatis obtusis in petiolum angustatis, racemo cernuo secundo, pedunculis defloratis deflexis, petalis calyce pluriès longioribus.

Facies omnino *C. grandifloræ*, quâ differt foliis magis obtusis, subtus sæpè discoloribus, floribus multò majoribus.

A most beautiful plant, introduced from the Berlin Botanic Garden in 1835, by the Horticultural Society, and though apparently a half-shrubby plant, capable of being treated with advantage as an annual. In all its habits and in its appearance it much resembles C. *grandiflora*, but is much handsomer, the flowers being three times as large, and remaining expanded all day long, whether in sunshine or shade, while those of C. *grandiflora* open only in the sunshine. It has probably been published in some continental botanical work, but I have not succeeded in meeting with any account of it.

It is a very showy half-hardy species, growing about one and a half or two feet high, in any rich garden soil, and flowering from the end of June until destroyed by the frost in autumn.

The seeds, which are produced in abundance, should be sown about the beginning of March, and treated in the same manner as those of other half-hardy annuals, that is to say should be raised on heat, and when the plants are large enough they should be potted off into small pots, putting three or four plants into each, and finally they should be planted out, about the end of May, as the least frost destroys them when young, although they will bear a little towards the end of the year.

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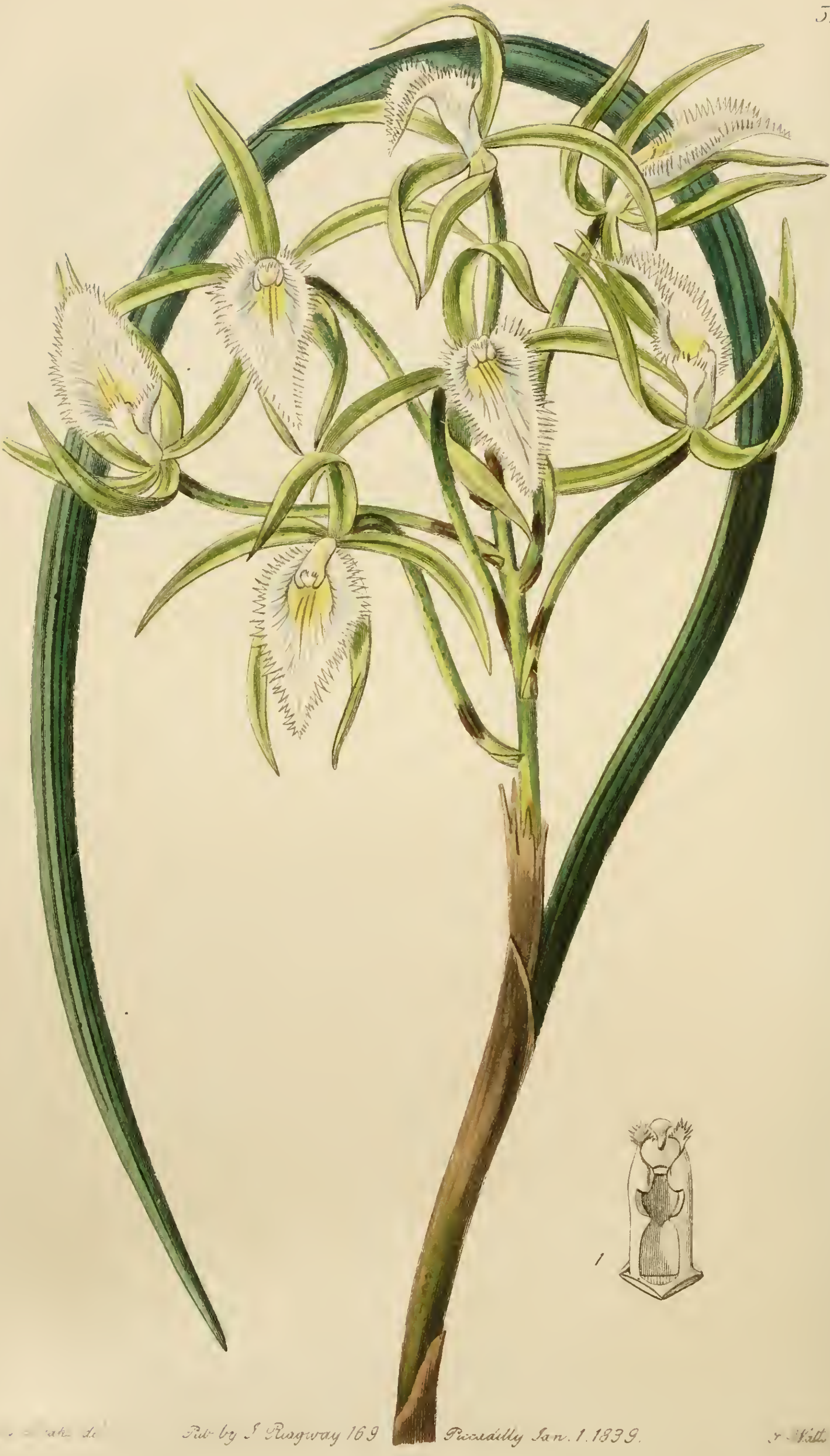
* See Botanical Register, fol. 1194.

They require to be planted rather thickly in beds, when they will become one of the greatest ornaments of the flower garden; the flowers opening early in the morning and not closing until the afternoon.

It may also be raised by sowing the seeds in the open border, about the middle of May, but the plants will be late in flowering, and not so fine as those raised on heat and transplanted.



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BRASAVŌLĂ Martiānă.

Dr. Von Martius' Brasavola.

GYNANDRIA *MONANDRIA.*

Nat. ord. ORCHIDACEÆ, § EPIDENDREÆ.
BRASAVOLA. Bot. Register, fol. 1465.

B. *Martiana ;* labello ovali (aut ovato) acuminato ciliato-dentato sessili ; petalis sepalisque lineari-lanceolatis acuminatis longioribus, clinandrio cucullato inciso. *Bot. Reg. fol.* 1914. *in textu.*

Folia *longa, teretia, suprà sulcis tribus exarata, racemo subcorymboso duplò longiora.* Pedunculi *læves, teretes, sepalis longiores, pone basin fusco-purpureo tincta.* Sepala *et* petala *lineari-lanceolata, subæqualia, patula.* Labellum *ovatum aut ovale, acuminatum, fimbriatum, basi luteum ; ungue brevi columnæ appresso.* Columna *apice cucullata, inflexa, fimbriata.*

This very distinct species of a small but interesting genus, imported from Berbice by Messrs. Loddiges, was originally discovered by Dr. Von Martius on the banks of the Rio Negro in Brazil, and it was from dried specimens in his herbarium that I first described it.

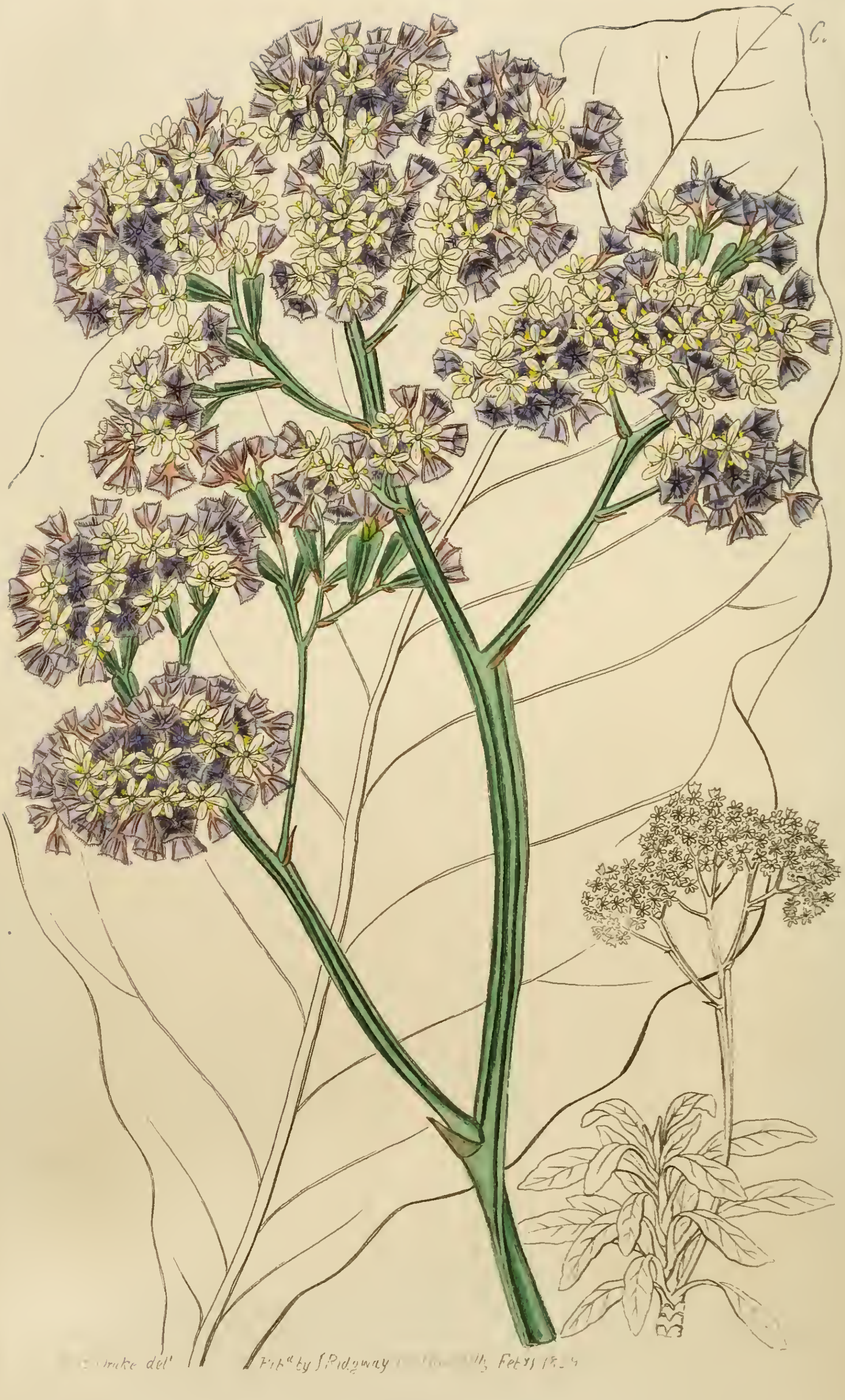
B. *cucullata* and B. *amazonica* are the only other species yet known with a fringed labellum ; the former has much larger flowers, and a lip of an entirely different form ; the latter has a one-sided raceme, and a labellum contracted in the middle so as to be distinctly divided into a hypochilium and epichilium.

All the Brasavolas yet described by Botanists now exist in this country, with the exception of B. *subulifolia*, a fine species inhabiting Nevis, with very slender subulate leaves, and the B. *amazonica* above named. The former might easily be procured ; the latter is beyond the reach of ordinary travellers, occupying the branches of trees surrounding lake "Egen," one of the offsprings of the Amazons.

January, 1839.

Fig. 1. represents the column, seen in front, with the fringed clinandrium or *anther-bed.*

This genus seems to delight in a rough and stony soil, not too retentive of moisture. This circumstance should therefore be kept in view when the species are potted or shifted. The soil should consist of rough peat, well mixed with broken bricks or small stones, and the pots must be well drained at the bottom. They do not seem to require so much water as is commonly given to most plants belonging to this order, but in other circumstances the treatment should be the same. Some cultivators prefer tying their plants to pieces of wood, and suspending them from the roof of the stove, but upon the whole they can hardly be said to succeed so well under that treatment as in pots, particularly if they have plenty of pot-room. All the species are propagated by division of the rhizoma.



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STĂTĬCĔ arbŏrĕă.

Tree Statice.

PENTANDRIA *PENTAGYNIA.*

Nat. ord. PLUMBAGINACEÆ.
STATICE. Bot. Reg. fol. 1450.

S. *arborea;* caule arborescente, foliis ovatis obtusis mucronatis basi angustatis, paniculâ compositâ terminali, ramis paniculæ alato-ancipitibus. *Willd. enum.* 1. 337. *R. & S. syst.* vi. 797.

It is hopeless in works of this kind to do justice to the beauty of a plant like this; and I am unfortunately obliged to apologize for the annexed figure being even more imperfect than it need to be, owing to the want of skill of a new engraver employed to execute it. This is the more vexatious as the drawing which had been prepared was excellent of its kind, and because the plant itself is probably the most strikingly ornamental of all that are in cultivation as greenhouse plants. At one of those great meetings in the garden of the Horticultural Society, which have given so remarkable an impulse to the art of gardening, there was a specimen of this species, from the nursery of Messrs. Lucombe, Pince, and Co. six feet high, and covered with large clusters of flowers, the brilliancy of whose blue, neither precious stones nor metallic preparations could even approach; for which a gold medal, an unusual mark of distinction, was awarded.

The introduction of this noble plant to our gardens is due, I believe, to P. B. Webb, Esq. When Von Buch visited the Canaries he only found it in gardens about Orotava, and he believed it to be extinct in its native places; and in truth it is amongst the most local and rare of all known plants. It is only on a few rocks, called the islets of

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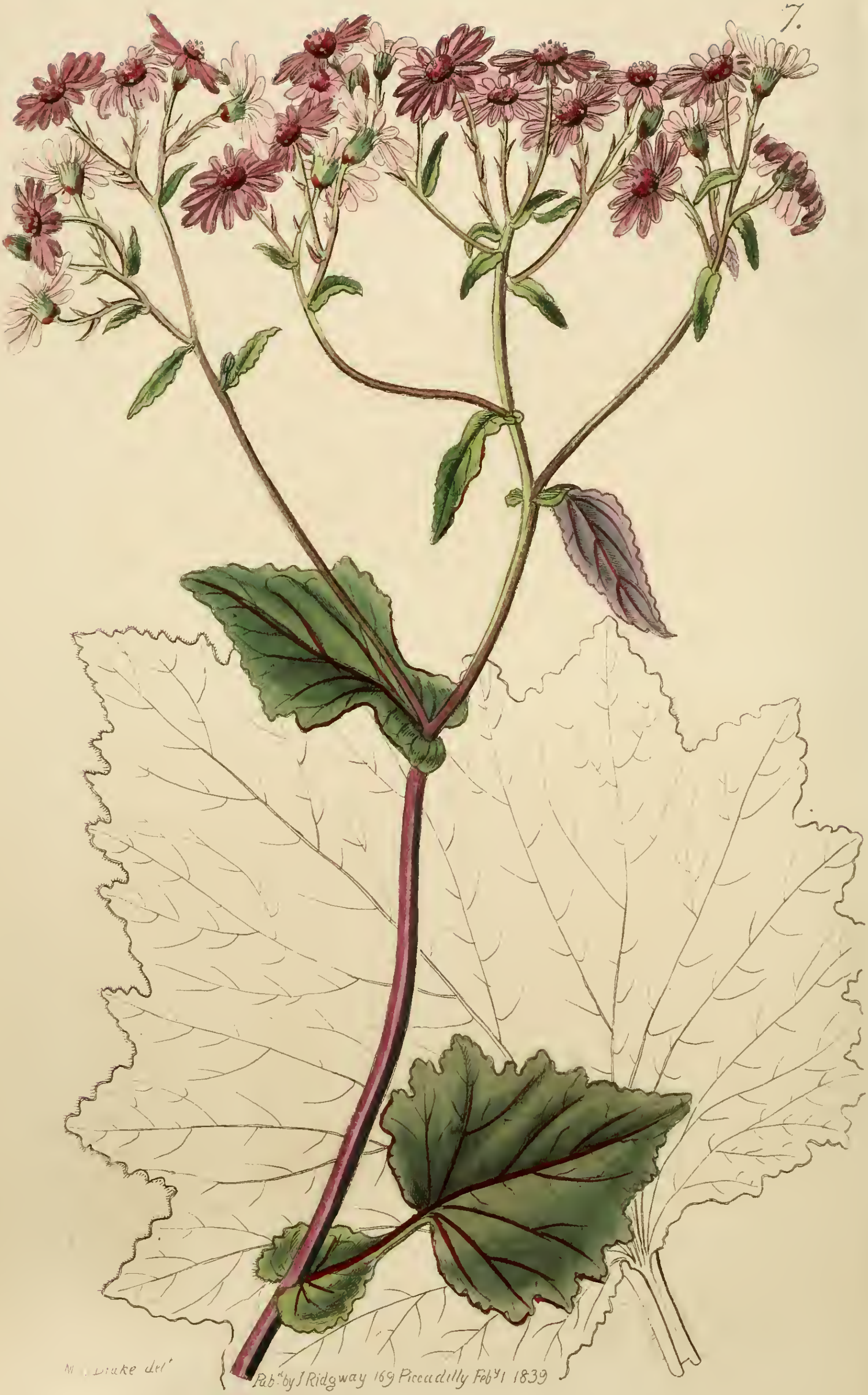

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Pubd by J Ridgway 169 Piccadilly Feby 1 1839

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SENĔCĬŌ cruēntŭs.

Blood-red Senecio.

SYNGENESIA *POLYGAMIA.*

ASTERACEÆ (COMPOSITÆ—SENECIONIDEÆ, *DeCandolle*).
SENECIO. Bot. Reg. t. 1342.

S. *cruentus;* caule herbaceo erecto pilosiusculo, foliis petiolo alato basi auriculato limbo cordato angulato denticulato utrinque pilosiusculo subtùs purpureo, capitulis corymbosis, pedicellis subbracteolatis, involucri squamis 15-16, ligulis 10-12. *DeCand. Prodr.* vi. 410.
Cineraria aurita. *Andr. bot. rep. t.* 24,
Cineraria cruenta. *L'Herit. sert. angl.* 26. *Vent. malm.* 99.

The many beautiful varieties of Cineraria, as they are miscalled, which render greenhouses so gay in the spring, and which are brought to such a high degree of perfection by Mr. Henderson of Pine Apple Place, are either referable to this species of Senecio, or are produced between it and *S. maderensis*, (the *Cineraria aurita* of the gardens). It is now therefore difficult to find a specimen exhibiting the appearance of the species in its natural state, unchanged by culture. I am therefore glad to have the opportunity of producing a figure made from a plant raised from seed collected in Teneriffe by Philip Barker Webb, Esq.; and at the same time of stating to what kind of climate the species is exposed in its native country.

Messrs. Webb and Berthellot, in their valuable account of the Canaries, recognize three principal modifications of climate, the lower, intermediate, and upper. *Statice arborea*, the subject of the last plate, belongs to the first, the nature of which has been already explained; *Senecio cruentus* belongs to the second. This zone extends from 1500 to 5000 feet above the sea, with a climate varying on the north and south sides of the mountains. It is on the northern side that *S. cruentus* is found, inhabiting groves of Laurels, Myrica Faya, Arbutus, Heaths, Ilex, and other shrubs, among which the Sweet Chesnut, and downy-leaved Oak are naturalized, and associating with species of Convolvulus, Ranunculus, Rubus, Geraniums, Strawberries, Violets, and similar plants. In these regions the air is moist, the sky is almost always overcast with clouds, especially during the day, while in the summer time fogs and mists are common, and in winter storms and heavy rains; there is no frost, and when snow falls upon the upper limits of the zone it melts immediately. The surface of the country is broken up into valleys and mountains, and the soil, although volcanic, is well covered with mould. How different this is from ordinary notions of the climate of the Canaries I need not say; it is obvious that if plants from such situations are treated as if they were the natives of an arid and sun-baked land, no success could possibly be obtained. In fact its treatment is that of a greenhouse plant, loving moderate temperature, and more moisture than usual when growing.

It is a half-hardy greenhouse perennial, of easy culture, growing well in any rich garden soil, and well adapted for early forcing, flowering nearly all the year. It is increased either by cuttings made of the young shoots in summer, or by division of the old plants early in the autumn. The cuttings, when rooted on the divisions of the old plants, should be transferred to small pots, and kept shut up close in a cold frame or pit for a week or ten days, shading them if the sun is very strong, and shifting them afterwards, as they require it, into larger pots; no artificial heat is necessary, except to keep out frost during winter. The principal thing to be attended to is the keeping the plants free from the green fly, which may be done by gentle fumigation, for if the fly is once allowed to remain until the leaves begin to curl, it will be impossible to remedy the evil, and the very best plants may be spoiled in a single week by neglecting to smoke them, particularly if artificial heat is used in spring for forcing.

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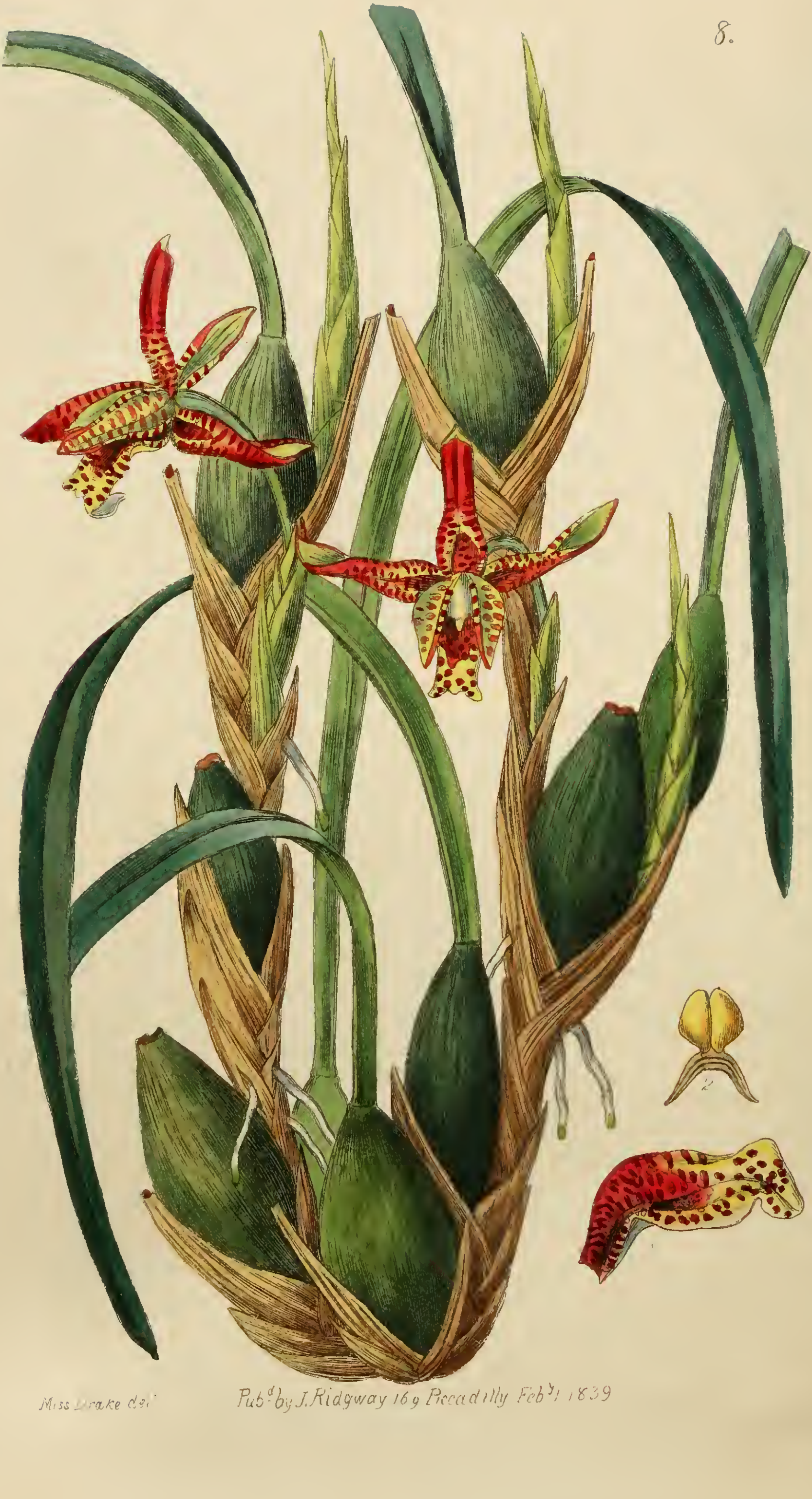

Miss Drake del.

Pub.d by J. Ridgway 169 Piccadilly Feb.y 1 1839

MAXILLĀRĬĂ tenuifŏlĭă.

Slender-leaved Maxillaria.

GYNANDRIA *MONANDRIA.*

Nat. ord. ORCHIDACEÆ, § VANDEÆ.

MAXILLARIA. *Bot. Register, fol.* 897.

M. *tenuifolia ;* caulescens, pseudobulbis ovato-oblongis compressis monophyllis squamis longioribus, foliis lineari-lanceolatis acutis recurvis, pedunculis axillaribus solitariis basi squamatis, ovario denudato arcuato, floribus cernuis, sepalis ovato-lanceolatis margine revolutis subæqualibus reflexis lateralibus basi subæqualibus, petalis ovatis obtusis conniventibus, labello oblongo indiviso apice ovato reflexo infra apicem utrinque contracto, callo disci oblongo integerrimo. *Bot. Reg. sub folio,* 1986.

A native of Mexico, in the vicinity of Vera Cruz, where it was found by Mr. Theodore Hartweg, an excellent naturalist, employed by the Horticultural Society of London, in Mexico, upon a mission which would have already produced most important additions to our gardens, had not his collections been unfortunately detained at Tampico in consequence of the French blockade of that port.

The species inhabits trees in Mexico, and probably is local, as it does not appear in any of the collections brought from the interior of the country. It belongs to the first or axillifloral section of the genus, the distinctive character of which is to have caulescent stems, covered with pseudo-bulbs, and having the flowers appearing from the axils of scales covering the stem. These, which are the most genuine form of Maxillaria, are the least beautiful part of the genus, and constitute a perfectly natural group, at first sight very different from the kinds which, like *M. aromatica,* have naked pseudo-bulbs rising immediately from the surface of the earth. But, upon comparing the two sections with each other, it will be found that the only essential difference between them consists in the one having erect and the other prostrate rhizomata ; the scales, or imperfect leaves, of the axilliflorous section being more developed than in the scapigerous species, in consequence of their being more exposed to light. Perhaps the genus should be limited to the species which form the two sections now mentioned, the spathaceous species being excluded, and such as *M. Warreana* and *costata* being either formed into a new genus or referred to *Peristeria*, whose character would then require to be modified; perhaps also such genera as *Bifrenaria* and *Dicrypta* would be better reduced to Maxillaria, with which, if newly limited, they would agree in habit. But these are points upon which it will be more easy to decide when a larger number of species shall have been correctly studied.

The present species is very pretty when in flower, and, from its freshness and greenness when in leaf only, is well worth cultivation, especially as it is one of the easiest to manage. It succeeds in a warm damp stove, in a pot with a block of wood thrust into the soil, and the long branching rhizoma tied to it. It grows almost equally well when tied to a wooden block, and suspended from the rafters of the stove. It bears without injury a quantity of water at its roots, and must also be freely syringed overhead. Amongst orchidaceous plants, none are more easily multiplied, as it throws out numerous pseudo-bulbs and roots, which, if taken carefully off, and subjected to the above treatment, will soon become vigorous growing plants.

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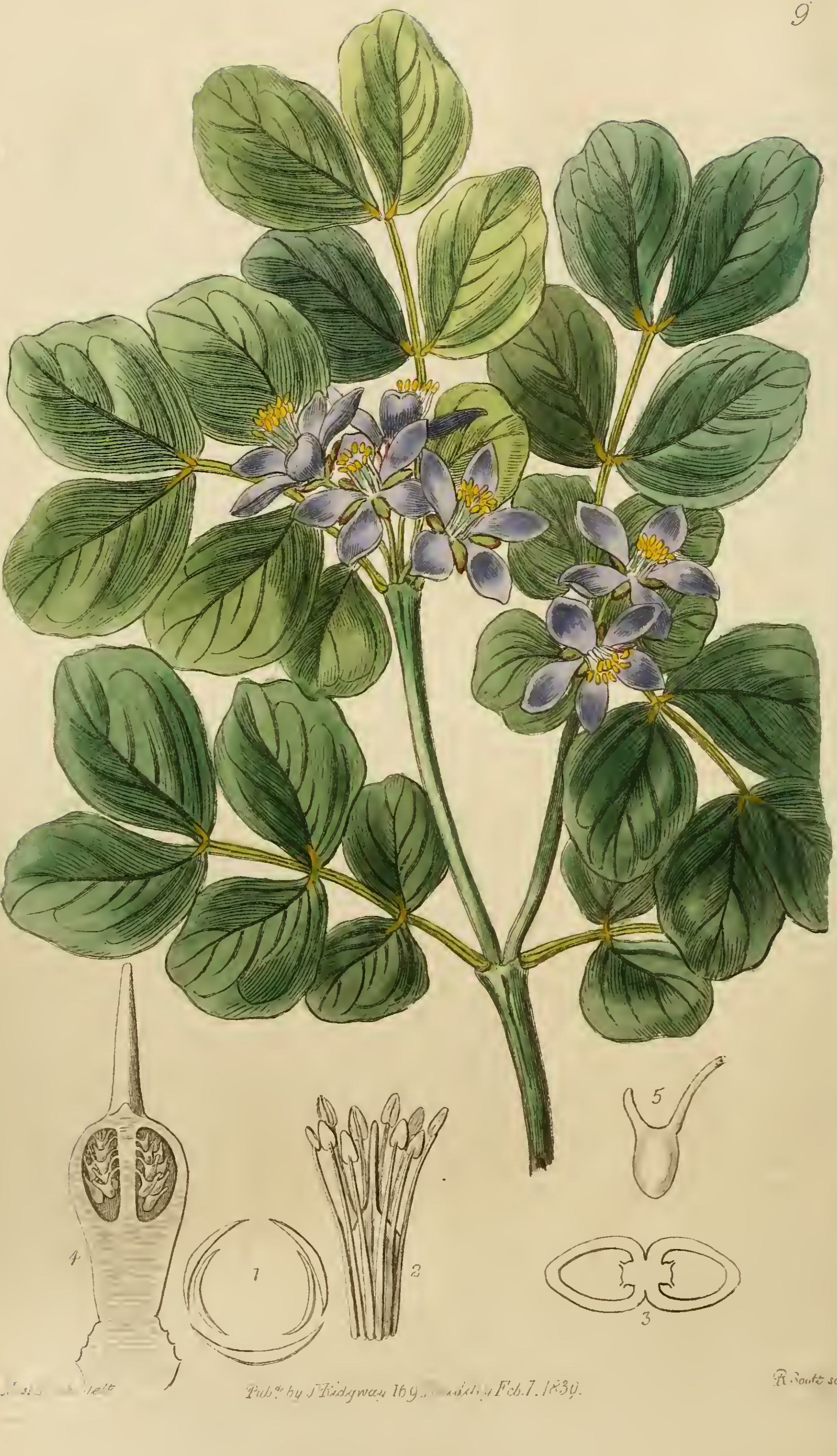

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* GUĀIĂCŪM officinālĕ.

Common Lignum Vitæ.

DECANDRIA *MONOGYNIA.*

Nat. ord. Zygophyllaceæ.

GUAIACUM Plumier. Calyx 5-phyllus, inæqualis; *sepalis* obtusis. *Petala* 5, unguiculata. *Stamina* 10, nuda. *Ovarium* 2-5-loculare, stipitatum, ovulis funicolo longo pendulis, rostratis. *Stylus* 1; *stigma* simplex. *Capsula* lignea, 2-5-locularis, angulata, polysperma. *Semina* pendula. *Albumen* rimulosum.

G. *officinale;* foliolis 2-3-jugis obovatis obtusis glabris, ramulis pubescentibus, pedicellis floribus parùm longioribus, ovario biloculari.

G. officinale. *Linn. sp. pl.* 546. *Swartz. obs.* 168. *Macfadyens Flora Jamaic. p.* 187. *Lindley Fl. Med. no.* 440. *DeCand. prodr.* 1. 707.

There are few species more worth cultivation than this, which nevertheless is seldom seen, except in curious collections. It is a neat and singular-looking stove plant, with bright light green leaves, and it blossoms regularly about midsummer, producing its brilliant blue flowers in abundance. The accompanying figure was made in the garden of the Horticultural Society.

If we were to judge, merely from the technical characters to be found in books, this would not be the species to which the name of *G. officinale* belongs; but it will be found by any one who will investigate the matter, that there is no little confusion among the few species or supposed species of this genus, and that the characters assigned to them in the writings of systematical Botanists require modification and a better adjustment. Whether or not this species really produces Lignum Vitæ, as is asserted, may admit of some doubt; for it grows extremely slowly, and it is scarcely to be

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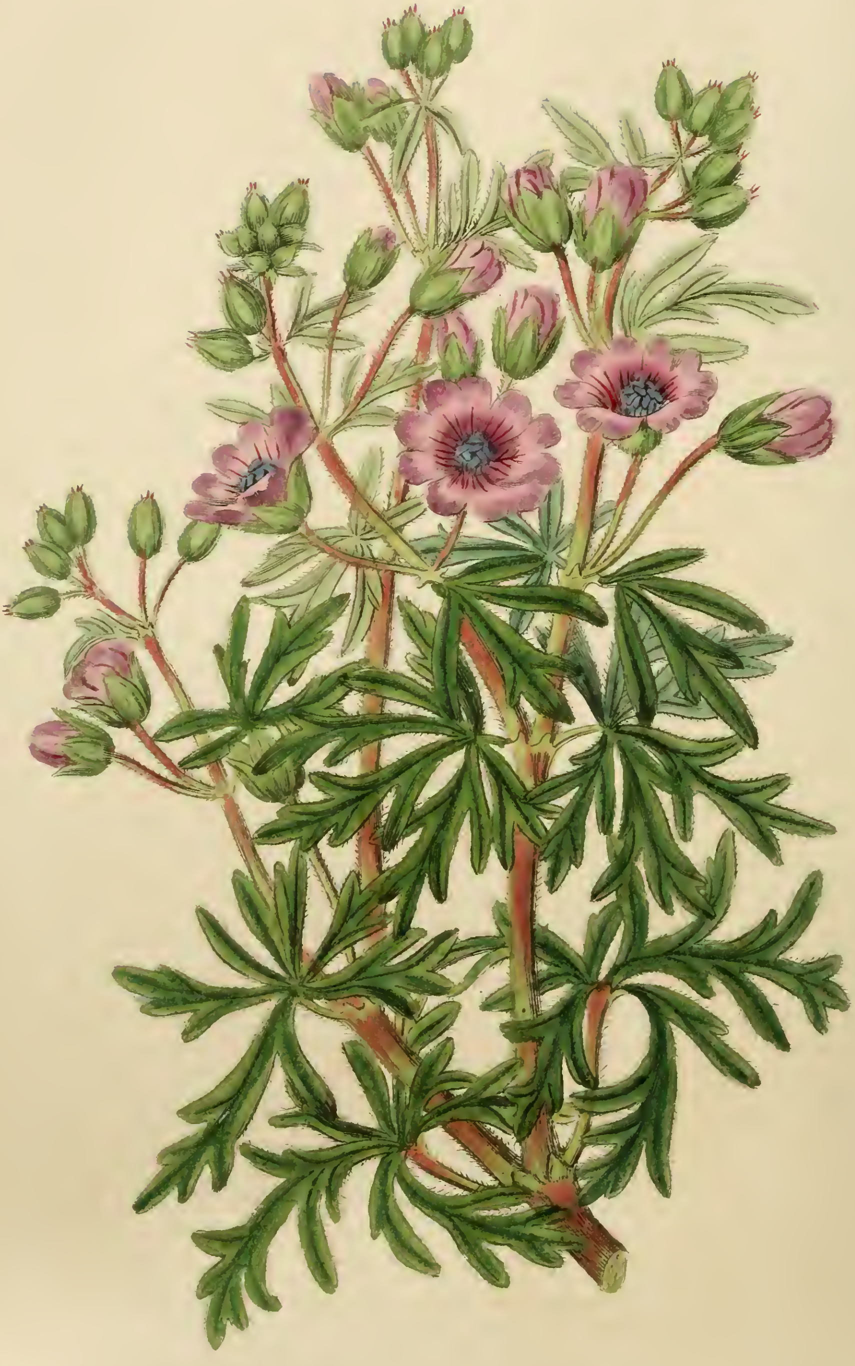
* *Guayac*, the American name.



M. Drake delin.

Pub.d by J. Ridgway 169 Piccadilly Feb:1. 1839.

R. Watts sc.

GERĂNĬŪM tuberōsūm ; *var.* ramosum.

Tuberous Geranium, branched variety.

DECANDRIA *PENTAGYNIA.*

Nat. ord. GERANIACEÆ.
GERANIUM. *Linnæus.*

G. tuberosum ; radice subglobosâ, caule simplici erecto nudo v. medio diphyllo, foliis 5-7-partitis : lobis pinnatifidis ; laciniis passim incisis, cymâ terminali patenti trichotomâ glanduloso-pilosâ, petalis emarginatis, staminibus liberis : filamentis recurvis pilosis alternis majoribus. *Flora Græca, t.* 659. cum synonymis.

Var. *ramosum ;* caule folioso ramoso, pedunculis sub-geminis sæpiùs axillaribus.

This curious Geranium is a hardy herbaceous plant, with fleshy roots the size of a walnut. It is met with in the kingdom of Naples, which seems its most western limit, and it occurs as far to the eastward as the Euphrates, where it was met with in abundance by Col. Chesney. In the fields of Greece and some of the islands of the Archipelago it is common, and it occurs to the north as far as the Crimea.

Usually its stem is quite simple, and produces two or three radical leaves, above which it rises to the height of five or six inches, where it forms a pair of opposite leaves, from between which rises the cyme of purple flowers. Such is the state of the plant in my specimens from Smyrna, the Volga, Naples, and the Euphrates ; so I find it in others dried many years ago in the Cambridge Botanic Garden, and in Sibthorp's Greek Herbarium, and it is so described by all systematic Botanists. The plant now figured, collected near Potenza by the Hon. W. F. Strangways, is however quite different, branching from its very base like other

Geraniums; on which account I have thought it desirable to note it as a peculiar variety.

This is supposed to be the first sort of Geranium described by Dioscorides, the root of which that author states is sweet and eatable.

It is a hardy perennial, growing well in any good rich garden soil, flowering the greater part of summer, and increased either in spring or autumn by seeds or division of the roots.

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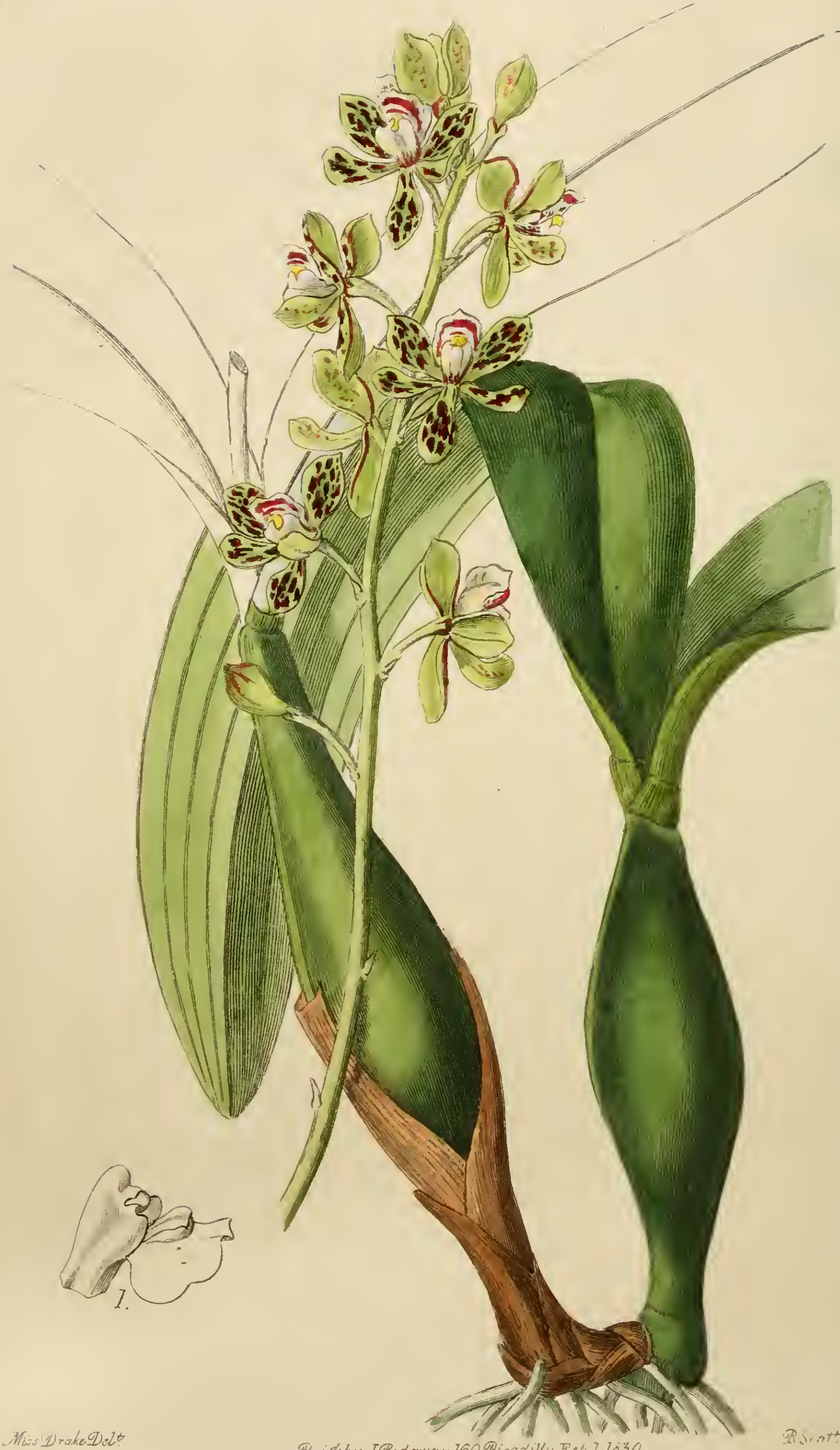


Miss Drake Delt

Pubd by J Ridgway 169 Piccadilly Feb 1.1839

R Scott sc.

EPIDĒNDRŪM variegātūm.

Variegated Epidendrum.

GYNANDRIA *MONANDRIA.*

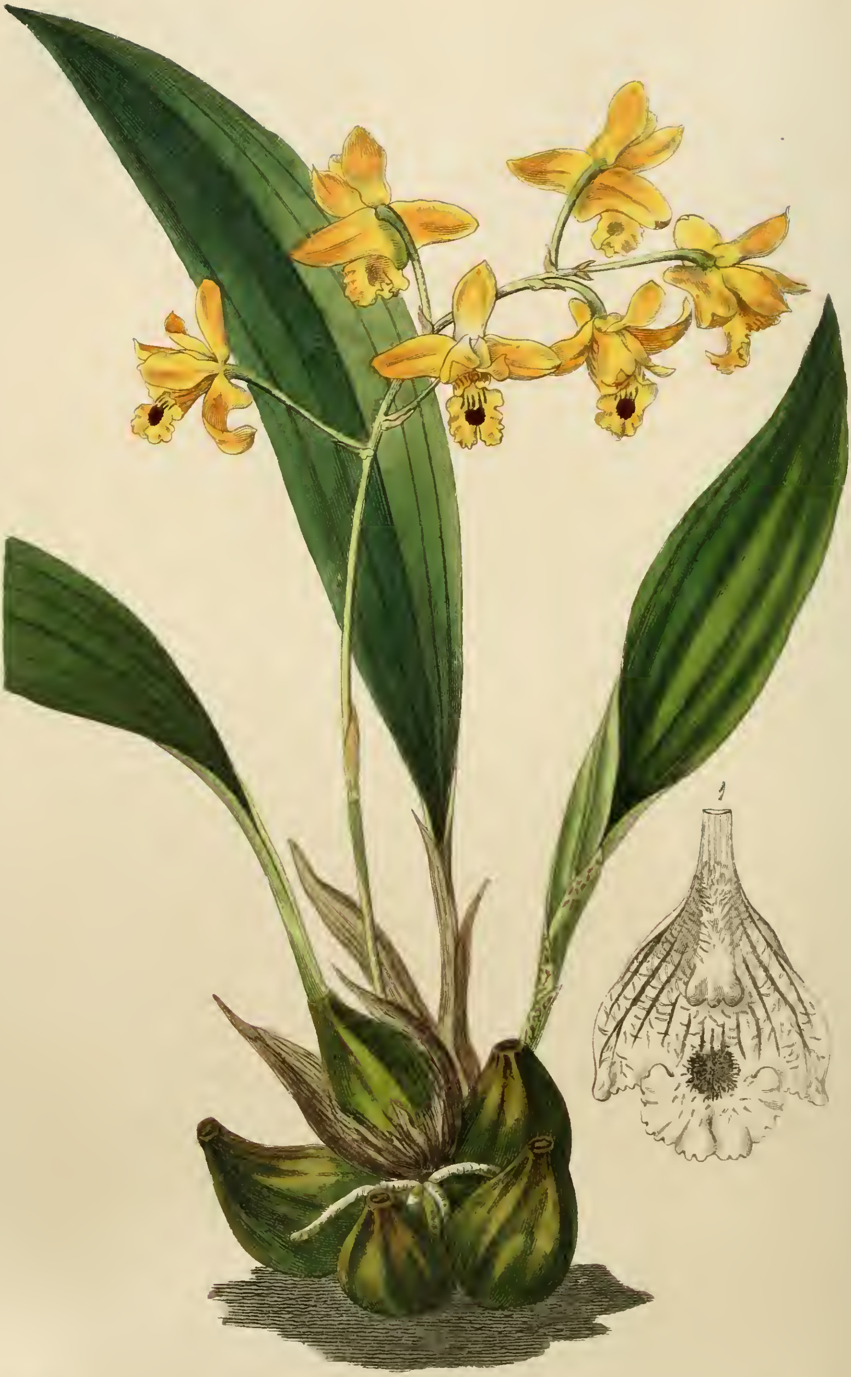
Nat. ord. Orchidaceæ, § Epidendreæ.
EPIDENDRUM. Bot. Reg. fol. 17.

E. *variegatum ;* pseudobulbis oblongis compressis 2-3-phyllis, foliis oblongo-lanceolatis obtusis, racemo simplici terminali, sepalis petalisque obovatis obtusis coriaceis, labello postico subrotundo acuto : callo baseos concavo emarginato dente columnæ posticâ obtusâ.
E. variegatum. *Bot. Mag. t.* 3151.
E. coriaceum. *Id. t.* 3595. a variety.

A native of Brazil, whence it has long since been imported, so that it now common in collections of Orchidaceæ, where it is valued for the delicious fragrance of its flowers, resembling nothing so much as Lily of the Valley. The figure now published was made many years ago in the collection of Messrs. Loddiges.

In many respects it agrees with *E. lancifolium* a Mexican, and *E. crassilabium* a Peruvian species ; but it differs from both in having the fleshy tooth, placed at the back of the anther, quite entire, blunt and rounded, not to mention other marks of distinction. Like *E. fragrans* it is very subject to variation, as must be obvious to any one who has remarked the peculiarities of the imported plants, which from time to time flower in collections, scarcely any two of which are exactly alike. Of these one is figured in the Botanical Magazine under the name of *E. coriaceum.*

In general the sepals and petals are marked with distinct purple blotches, on a pale green ground ; but sometimes they are richly dotted, and occasionally are cream-coloured, with only a few specks of purple. I am also disposed to regard as another variety a plant found by M. Descourtilz near Ilha Grande in Brazil, on fallen trees, in the midst of sandy plains, fully exposed to the sun. In this the leaves and pseudobulbs are very narrow, and the flowers are a pale dull dirty yellow, with narrow linear-lanceolate segments. It forms t. 67 of Baron Delessert's unpublished figures of Brazilian Orchidaceæ.



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MAXILLĀRĬĂ vitellīnă.

Yellow racemose Maxillaria.

GYNANDRIA *MONANDRIA.*

Nat. ord. ORCHIDACEÆ, § VANDEÆ.
MAXILLARIA. Fl. Peruv.

M. *vitellina;* pseudobulbis ovatis obtusè angulatis monophyllis, foliis lanceolatis in petiolum canaliculatum angustatis, racemo cernuo radicali foliorum longitudine, labelli cuneati trilobi lobis lateralibus acutis anticè crenulatis intermedio bilobo rotundato cordato crenulato, tuberculo disci trilobo obtusissimo, ungue pubescente. *Bot. Reg.* 1838. *misc. no.* 116.

A Brazilian epiphyte, allied to *M. racemosa*, which differs in having an undivided labellum, a hairy column, and in many other circumstances.

M. aureo-fulva, another beautiful plant related to this, and well figured in the Botanical Magazine, t. 3269, has an acuminate even lip, little differing in form from the sepals and petals. It is the "Epidendre Limodore" of Descourtilz, and was found by that traveller in great abundance upon fallen trees encumbering the sandy plain through which the great public road passes from Bananal to Ilha Grande.

The exact locality of this is unknown. It was imported by Messrs. Loddiges, with whom it flowered in June, 1838.

It requires the temperature and humidity of the moist stove. After it has perfected its pseudo-bulbs for the season, it should be kept perfectly dry for a considerable length of time; and, if convenient, removed to a cooler house. This will make it grow and flower freely when it is brought back to the moist stove. In all other respects, its treatment should be the same as is practised with other tropical plants of this very extensive order.

Any of the back pseudo-bulbs, such as are represented in the plate, by being taken off will form plants, but the front ones are by far the best.

This genus is now so extensive, that it is difficult even for those most familiar with the species to avoid errors in publishing what are supposed to be new ones. I therefore may be permitted to observe, not for the purpose of criticizing, but for the sake of preventing, if possible, the inconvenience of multiplying names, that the *M. Henchmanni* of the Bot. Magazine, t. 3614, is one of the forms of *M. variabilis*. *M. pumila* of the same work, t. 3613, is so very near *M. uncata*, that although from the figure it seems different, it is desirable to re-examine it, and I shall be glad to receive it from some of my correspondents.

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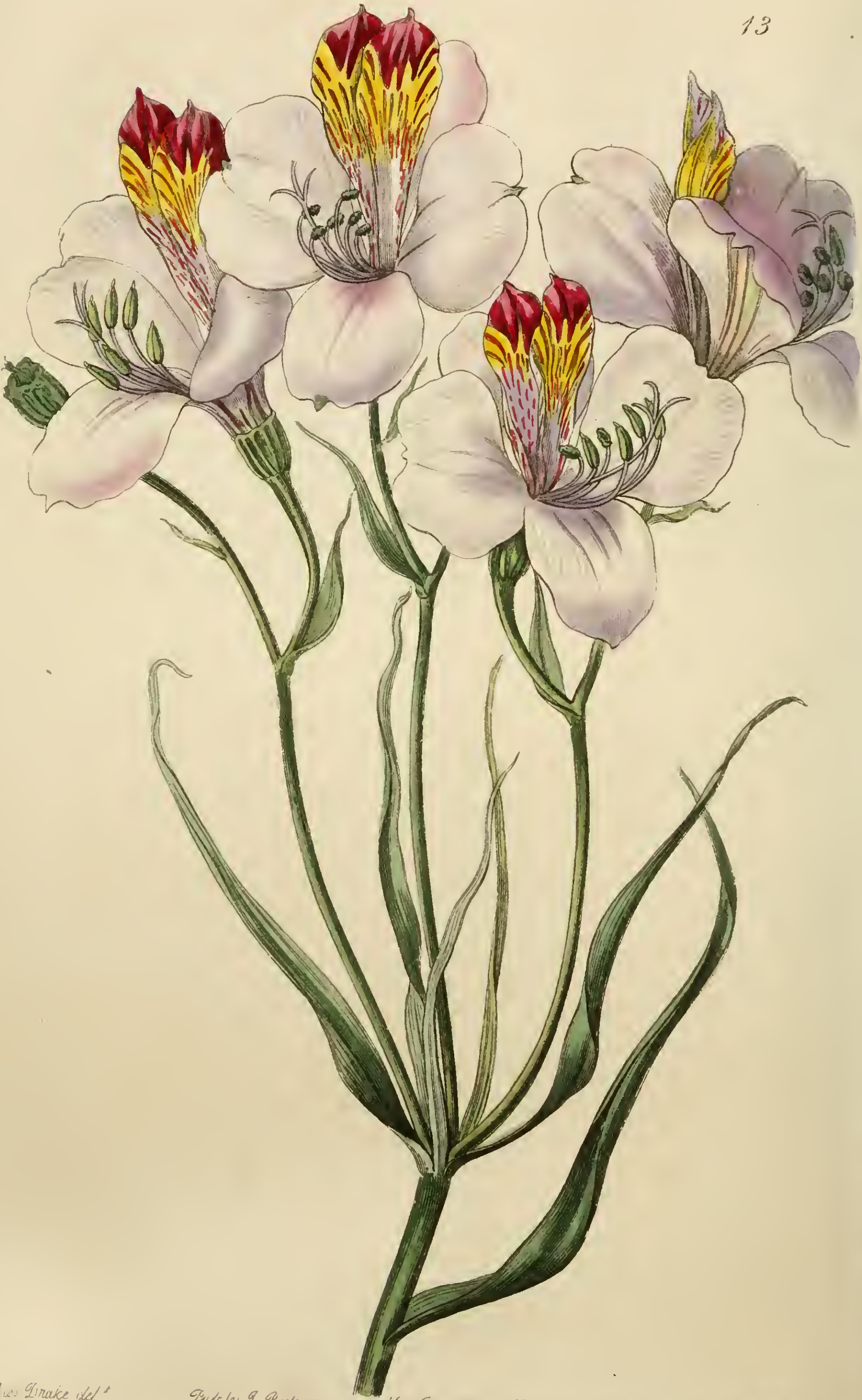

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ALSTRŌMĒRĬĂ Lī̆gtū.

The Ligtu.

HEXANDRIA *MONOGYNIA.*

Nat. ord. AMARYLLIDACEÆ.

ALSTROMERIA. Bot. Reg. vol. 17. *p.* 1410.

A. *Ligtu ;* foliis lineari-lanceolatis acuminatis glabris apice subcirrhosis, pedunculis corymbosis subbifloris foliis longioribus, sepalis obovatis emarginatis mucrone interjecto, petalis 2 posticis spathulatis apiculatis.

Hemerocallis floribus purpurascentibus striatis vulgò Ligtu. *Feuillée obs.* 710. *t.* 4.

A. Ligtu. *Linn. sp. pl.* 462. *Fl. Peruv.* 3. *p.* 59. *Römer et Schultes,* 6. 735. *Herbert Amaryllid.* 92.

A. Feuillæana. *Meyer in Reliq. Hænk.* 2. 122.

Caulis *in spontaneâ* 1-1½*-pedalis, adscendens, simplex, in cultâ* 3*-pedalis et ultrà.* Folia *linearia et lineari-lanceolata, alterna, torsione resupinata aut omninò recta, sub corymbo verticillata.* Pedunculi *corymbosi, sæpius biflori, nunc triflori, foliis longiores, medio bracteati.* Sepala *membranacea, apice patentia, vix serrata, obovata, emarginata vel ferè obcordata, mucrone viridi interposito, alba, purpureo pallidissimo suffusa.* Petala *postica spathulata erecta, apiculata, basi alba sanguineo punctata, apice sanguinea, medio lutea sanguineo obliquè et interruptè vittata.*

How the figure of the Ligtu given by Feuillée, barbarous as it is, could have been supposed to represent the Brazilian plant called in gardens *Alstromeria Ligtu*, which is in fact the *A. caryophyllæa* of Jacquin, it passes my skill to discover. This is a distinctly marked species, the characteristics of which are the long-branched peduncles, and the obovate or obcordate sepals ; to which may be added, that the latter are little if at all serrated.

A. Ligtu is so named because, according to Feuillée, it is called "Ligtu" in Chile ; dried specimens from that country are not uncommon in herbaria, and the plant probably exists in many gardens, although not distinguished from either *A. Pelegrina* or *pulchra.* The former differs in its short, one-flowered, rigid, peduncles ; the latter in its shorter flowers, and spathulate rather than obcordate, serrated sepals. The accompanying figure was obtained from a plant in the possession of Charles Barclay, Esq. of Bury Hill, in July, 1838. It was exhibited at one of the great meetings in the Garden of the Horticultural Society, where it was conspicuous among many beautiful species for the delicacy of its flowers and their large size.

In his elaborate account of Amaryllidaceæ, Mr. Herbert notices four varieties of this plant. But I conceive that one of them (No. 2.), the *A. lineatiflora* is more referable to *A. pulchra* than to *Ligtu*, if it is not different from both; and another (No. 4.), noticed from dried specimens in my herbarium, to *A. Pelegrina.*

It is not intelligible why those very beautiful flowers should not be more generally cultivated, for surely there is no genus more likely to reward the care of a skilful gardener. It would appear however that they are not general favourites, for although the Horticultural Society have encouraged the growth of them by assigning the genus a separate place in the list of objects for which medals are offered at their Garden meetings, yet there has at present been little competition. For the information of those who are disposed to turn their attention to the subject, and who have the opportunity of procuring new species from South America, where the most showy species still remain to be introduced, the following extract is taken from Mr. Herbert's excellent work.

"Being chiefly natives of alpine situations, these beautiful plants require free air, and (with the exception of Caryophyllacea amongst those we possess) very little protection, except from severe frost. A. Hookeri, planted in front of one of my stoves, formed a large patch, the foliage resisting all frost in that situation, and flowered throughout the summer; but the two last dry summers have greatly reduced it. They are very thirsty plants in the season of their growth, and should be abundantly watered in dry weather at that time."

"A. psittacina, as well as hæmantha and aurantiaca, flowers well in the open ground, if covered with straw or a thick coat of leaves in the winter. The soil should be light, and the tubers set pretty deep; and any heading that would throw the wet off in the winter will be found advantageous. It is absolutely necessary to pick the slugs off the border, which will otherwise devour every shoot at its first appearance above ground; and it will be found advantageous to cover the bed in the spring with dry sawdust, which the slugs do not like to crawl over, and will keep moisture in the ground. A top covering of peat is also disagreeable to slugs, which I find very troublesome in biting the flower-stalks of Gladioli on sandy loam, but they rarely do so on a border of black earth."

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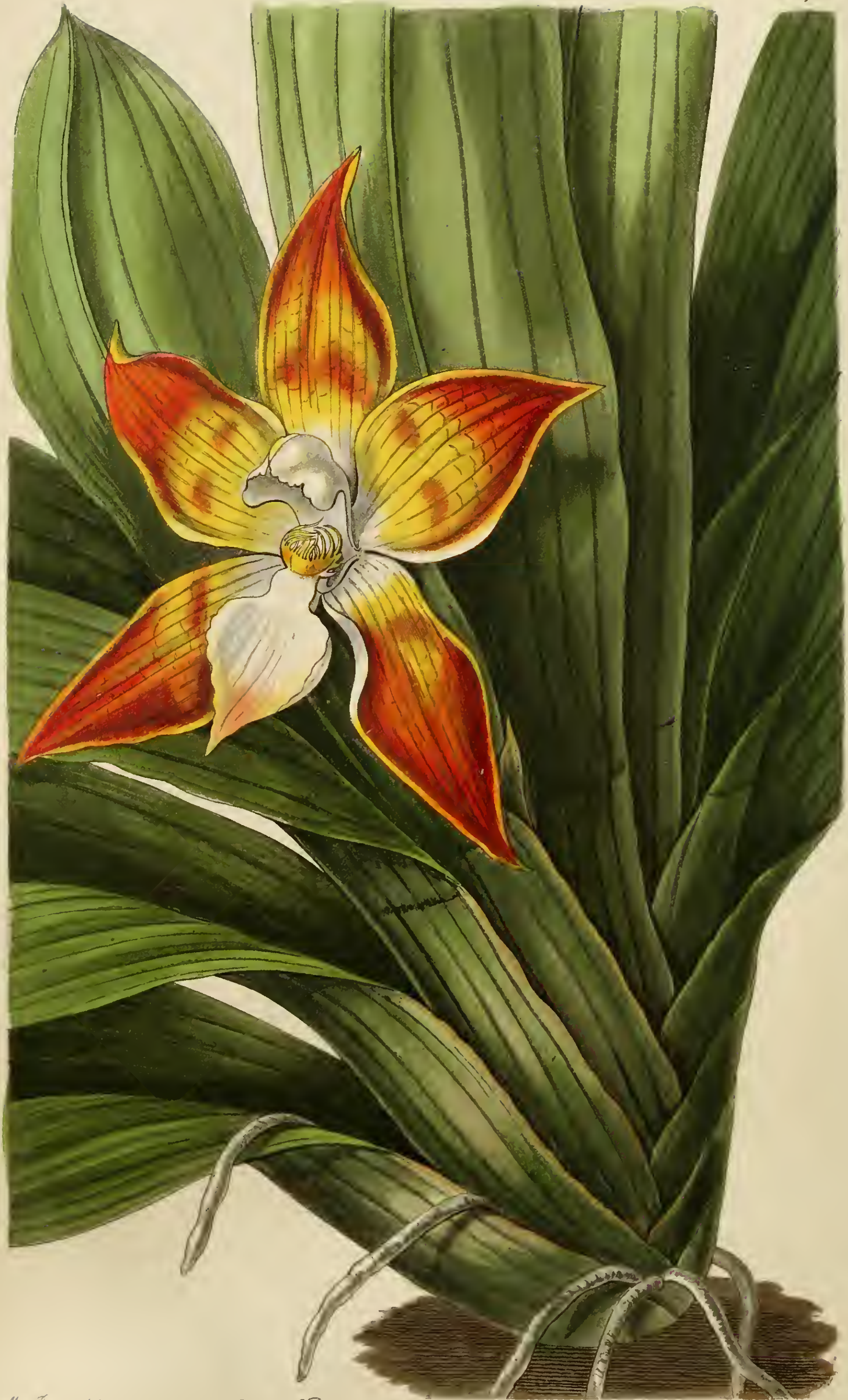

Miss Drake del.
Pub by J Ridgway 169 Piccadilly March 1839
G Barclay sc

* HŪNTLĔYĂ Meleāgrĭs.

Speckled Huntleya.

GYNANDRIA *MONANDRIA.*

Nat. ord. Orchidaceæ, § Vandeæ.
HUNTLEYA. Bot. Reg. fol. 1991 *in textu.*

H. *Meleagris;* sepalis petalisque ovatis acuminatis tessellatis, labello subconformi unguiculato concavo cristâ baseos fimbriatâ, columnæ cucullo crenato.
Huntleya Meleagris. *Bot. Reg. l. c.* 1838. *misc. no.* 20.

This is at present one of the rarest of the epiphytes in cultivation, the only specimen I have seen being that now figured, which flowered with Messrs. Rollissons in July, 1838. Its blossoms are much yellower and less tessellated with purple than in the Brazilian drawing from which the species was first described, and it is not improbable that it will be found to vary in this respect. The whole surface of the flowers had quite the appearance of being glazed.

The following is M. Descourtilz's account of the plant, a little reduced from his manuscript in M. Delessert's copy.

Rootstock as thick as the little finger, green, cylindrical, with white rootlets on the under-side. *Leaves* alternate, in two opposite rows, forming a very much compressed fan; above they are bright green and smooth, beneath they are bluish green, with paler and projecting longitudinal veins. These leaves are a foot or more long, and about an inch wide; from the axil of the lowest of them rises a cylindrical pale green peduncle, with two opposite bracts near the middle.

The *flower* is large, terminal, solitary, having five petals, broad at the base, with a white claw, and a claret-coloured ground on the inside, which is sometimes speckled with

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[*] So called by Mr. Bateman, in compliment to the Rev. Mr. Huntley, a zealous collector of rare plants.

greenish pink, and always marked by longitudinal lines connected by other transverse ones, which thus form numerous elevations, and make the flower look like a draughtboard. The two lower sepals have their inner edge at the base rolled inwards like a horn. The *labellum* is triangular, tongue-shaped, of a pure ivory white, bordered with deep purple, and nerved with a deeper tint. Its edges are turned downwards, and it is attached to the base of the column by a narrow white claw. At the origin of the claw is a crescent-shaped plate, hollowed out at its upper edge, and fringed with long stiff white hairs, which furrow downwards all the part that supports them.

This charming plant is found in gloomy damp woods on the banks of the Rio de Pirapitinga, in the district of Bananal. It is scentless, and flowers in June.

Mr. Rollisson assures me that he received his specimen from the same country as that which produced the *Zygopetalon cochleare*, figured in this work, plate 1857; if so, I must have been misinformed as to Trinidad being the native country of the latter. I am the more disposed to believe that such was really the fact, because I find a drawing, of what is apparently a luxuriant specimen of Z. cochleare, among M. Descourtilz's collection, gathered in Brazil, on the high mountains separating the province of St. Paul's from that of Minas Geraes, and known by the name of the Mantiqueiras, where it flowers in the hottest season.

It thrives very well in the orchideous-house at Tooting, where the atmosphere is kept saturated with moisture, and the temperature is in winter from 60° to 70° Fahr., and in summer from 70° to 90°. The house is of course well shaded from the bright rays of the summer's sun. Like other kinds of orchidaceous plants with thick fleshy roots, this requires a considerable quantity of water, and should be freely syringed. It is grown in a pot, but would probably succeed quite as well if hung up, as the greater part of those with fleshy roots do much better in that way.

It is propagated by taking off the young shoots, which it sends out rather slowly.

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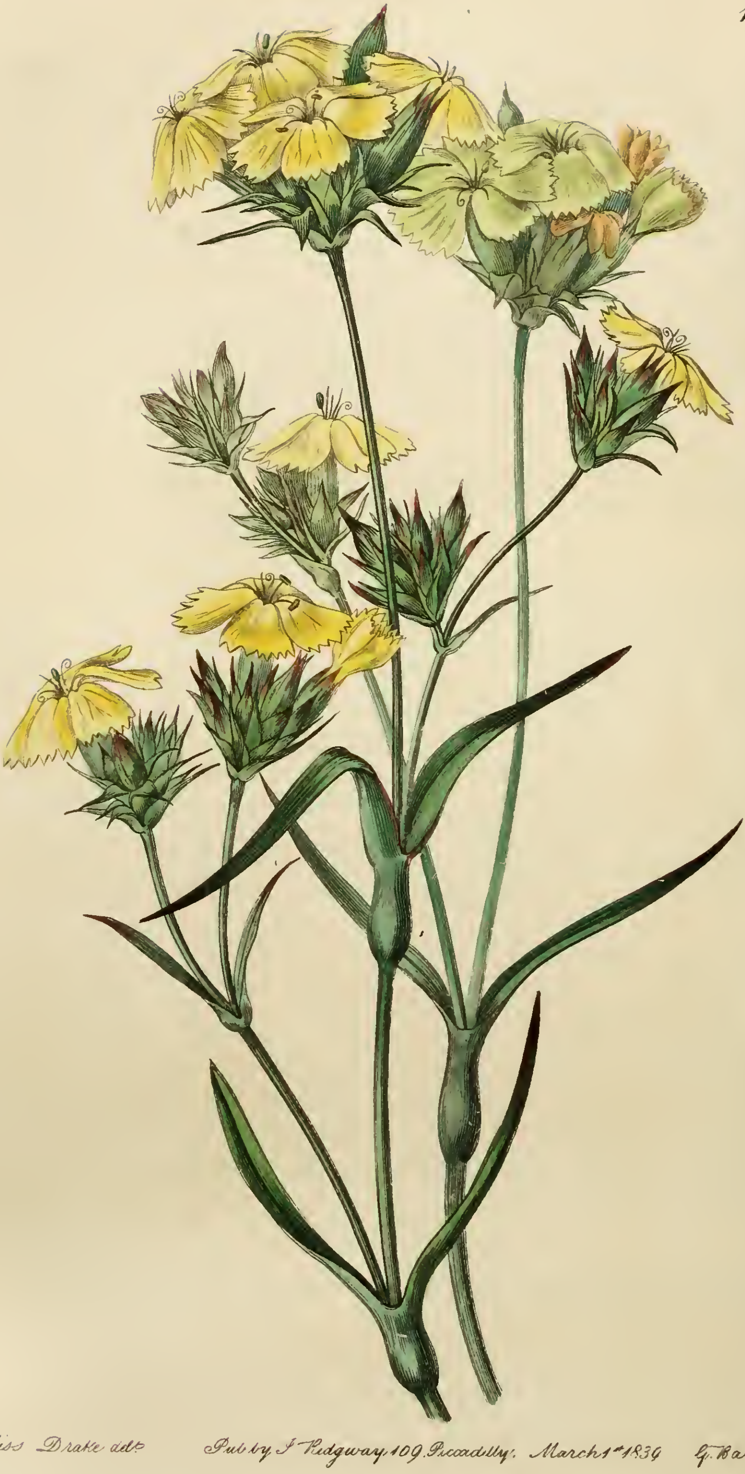

Miss Drake delt. Pub by J. Ridgway, 109. Piccadilly. March 1st 1839 G. Barclay. sc.

DIĀNTHŬS ferrugĭnĕŭs.

Yellow Pink.

DECANDRIA *DIGYNIA.*

Nat. ord. SILENACEÆ.
DIANTHUS. Bot. Reg. vol. 18. *fol.* 1548.

D. *ferrugineus;* herbaceus, floribus aggregatis, bracteis spinescentibus squarrosis propriis calyce brevioribus, petalis flavis cuneatis dentatis, foliis linearibus margine lævibus basi longè connatis.

D. ferrugineus. *Linn. mantiss.* 563. *DeCand. prodr.* 1. 356. *Tenore Sylloge* 207.

Among the many beautiful species of Dianthus which the lovers of hardy herbaceous plants possess, that now figured is one of the rarest and most remarkable, on account of its flowers being of a clear pale yellow, instead of white or pink as is more usual.

It is nearly allied to *D. carthusianorum,* from which it differs in the squarrose character of its bracts, and its smooth edge leaves, as well as in the colour of the petals.

Whether it is to their intermixture with this, or the little known *D. ochroleucus* of the Levant, that some of the more precious varieties of Piccotees and Carnations owe their yellow, is unknown; this is, however, so rare a colour in the genus, that the effect has probably been produced by either one or the other.

The specimen figured was given me by Henry Fox Talbot, Esq. Its seeds were brought from the Botanic Garden, Florence, by the Hon. W. F. Strangways.

This is a delicate but very neat hardy perennial, growing from twelve to eighteen inches high, in any light rich soil and rather dry situation, flowering about July or August.

It may be increased either by seeds sown in the spring, or by pipings in autumn; but, like Dianthus Libanotis, it suffers very much, and is often entirely destroyed, if not protected from the wet in autumn and winter by a hand-glass.

It is a native of Calabria, the Abruzzi, and other parts of the kingdom of Naples; and also it is said of the Apennines.

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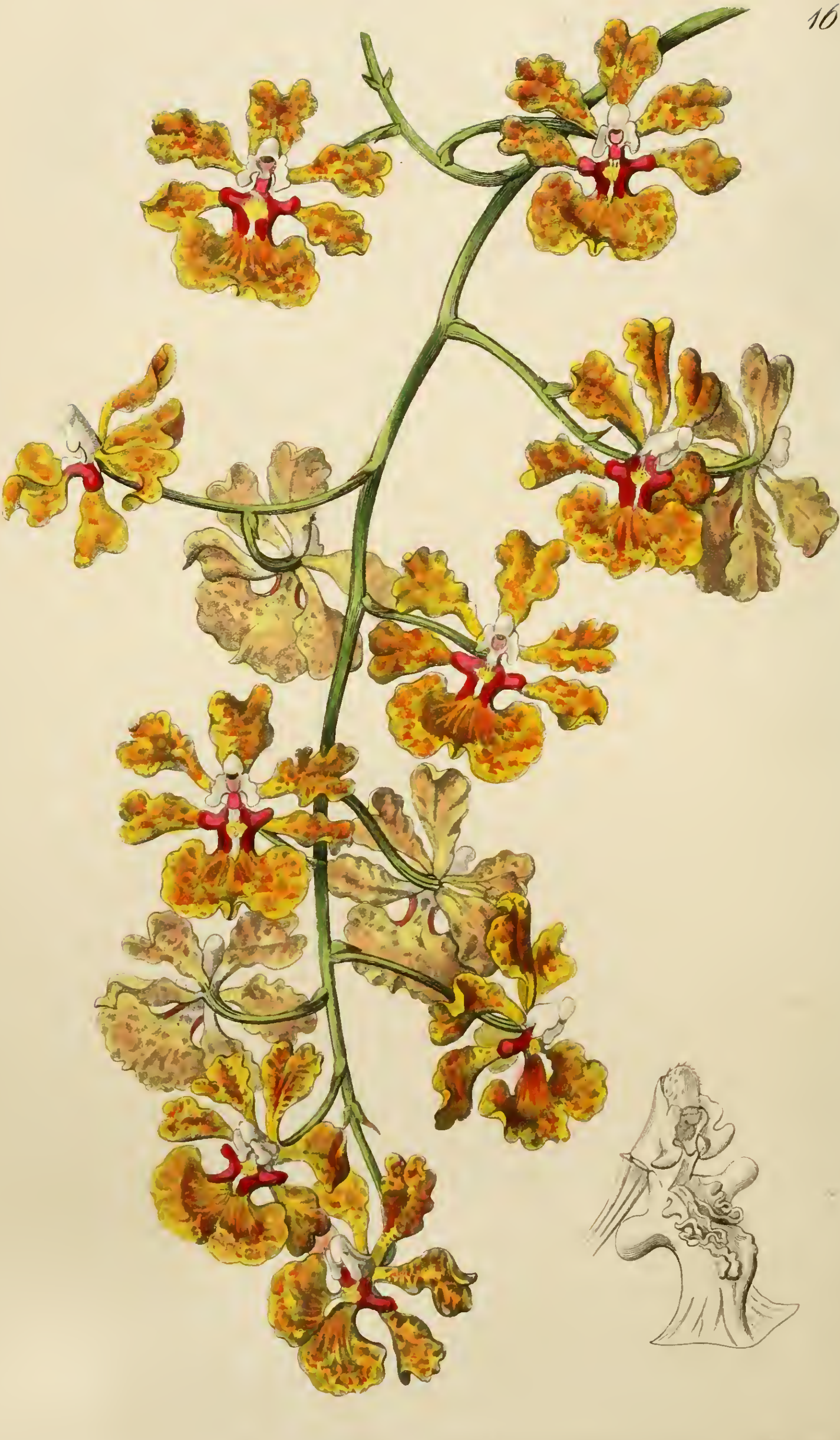


Miss Drake delt. Pub by J. Ridgway 169 Piccadilly March 1. 1839. G. Barclay sc

ONCĬDĬŪM lūrĭdūm ; *var.* guttātūm.

Mr. Boyd's Oncidium.

GYNANDRIA *MONANDRIA.*

Nat. ord. ORCHIDACEÆ, § VANDEÆ.
ONCIDIUM. Swartz.

O. *luridum.* *Gen. et Sp. Orch. p.* 201.
β *guttatum ;* sepalis petalisque luteis sanguineo-maculatis.
Epidendrum guttatum. *Linn. sp. pl.* 1351.
Cymbidium guttatum. *Willd. sp. pl.* 4. 102.
Oncidium Boydii. *hort.*

That this is the long lost *Epidendrum guttatum* of Linnæus, a Jamaica plant, unknown to Swartz, who so carefully investigated the Botany and especially the Orchidaceous plants of the island, I do not doubt. The name *luridum* ought therefore in strictness to be abolished ; but that of *guttatum* applies so generally to the whole genus, that there would be more inconvenience than advantage in the measure.

It was imported from Jamaica by Messrs. Rollissons, to whom I am obliged for the specimen from which the figure has been taken. Certainly, *O. Lanceanum* and *Forbesii* alone excepted, this is the most beautiful plant of the genus yet in our gardens ; the richness of its colours, the profusion of its flowers, and its stately growth, for it is from three to four feet high, would even make it doubtful whether it does not rival the former species, only it wants the aromatic odour.

In structure it differs nothing from *O. luridum,* so far as I can ascertain.

It requires to be cultivated in the orchidaceous-house or moist stove, either suspended from the roof, or elevated above the surface of the pot. It should be placed in the warmest part of the stove, and its roots in particular freely syringed. The soil should be turfy peat, kept open with broken bricks or pots, to allow a free passage for the water. Water must be given more freely at certain seasons than at others ; but it does not require such a long period of rest as Catasetums and plants of that kind, and therefore may be kept almost continually growing.

It is multiplied by division, the front shoots making the best plants.

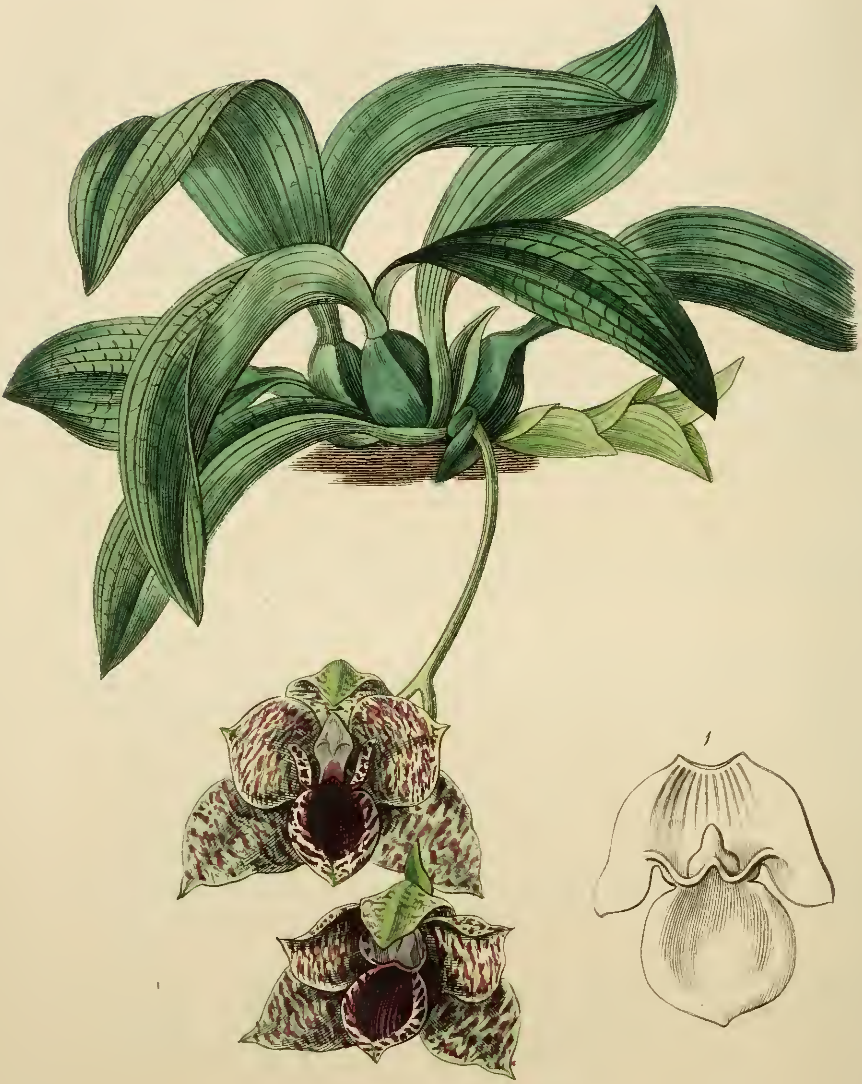
So little is correctly known concerning the native habits of the great order of Orchidaceous epiphytes, that I gladly avail myself of a vacant space to give the following localities of some other Oncidiums, as stated by M. Descourtilz in his MSS.

Oncidium ciliatum. Flowers in September, in *low woods*, surrounding the table-land (plateaux) of the neighbourhood of Bananal.

Oncidium iridifolium. Found in Brazil, exclusively on branches of the Orange and Lemon, flowering in April. The fruit is large, and has six large transparent wings. Very common in the province of St. Paul's, about the town of Bom Jesus de Bananal, choosing in preference *dry places exposed to the sun.*

Oncidium pubes. *Thin forests*, surrounding the table-land near Bom Jesus de Bananal, flowering in the month of May.

Oncidium divaricatum. Trunks of the highest trees, in elevated mountains of the Serra das Argoas in the district of Ilha Grande, flowering in February.



Miss Drake delt. Pub by J. Ridgway. 169 Piccadilly. March 1st 1839 G. Barclay sc.

MAXILLĀRĬĂ stapeliōīdēs.

Stapelia-like Maxillaria.

GYNANDRIA *MONANDRIA.*

Nat. ord. ORCHIDACEÆ, § VANDEÆ.
MAXILLARIA. *Fl. Peruv.*

M. *stapelioides;* pseudobulbis ovatis tetragonis 1-2-phyllis, foliis tenuibus lanceolatis patentibus pallidè glaucis reticulatis, pedunculo diffuso bifloro, sepalis petalisque subrotundo-ovatis acutis patulis subæqualibus, labello oblongo trilobo: laciniis lateralibus erectis linearibus obliquis obtusis intermediâ ovato-oblongâ basi cucullatâ, cristâ transversâ flexuosâ carnosâ intùs dente carnoso ovato auctâ.

M. stapelioides. *Lind. et Otto abbild.* 111. *t.* 52. *Gen. et Sp. orch.* 146.

This is one of the Brazilian Maxillarias, whose pseudobulbous habit separates them in appearance so widely from the caulescent species upon which the genus was originally founded. For remarks upon this point, the reader is referred to plate 8 of the present volume.

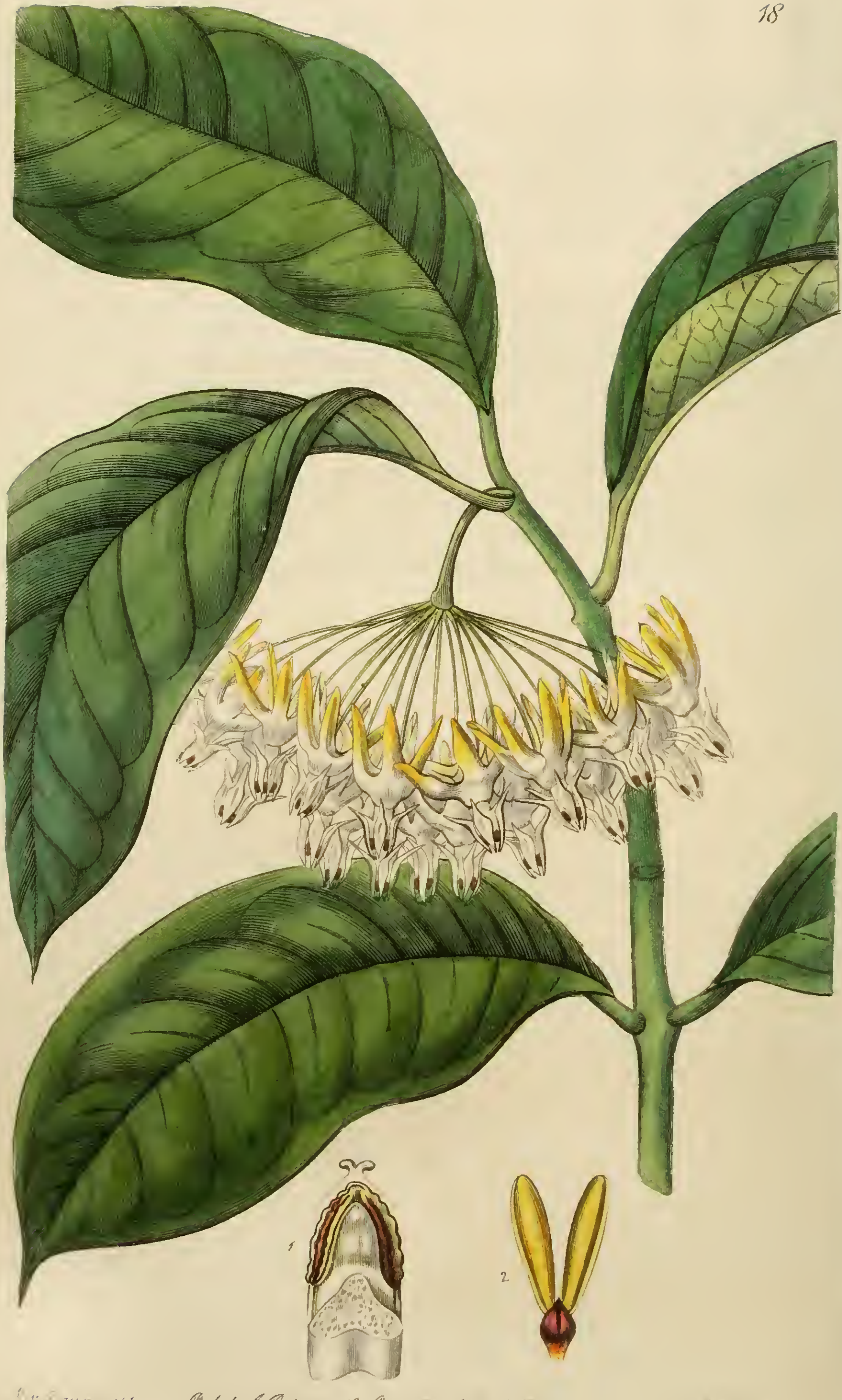
The species whose singular speckled flowers have suggested the comparison with a Stapelia, inhabits the Organ Mountains, where it was found by Mr. Gardner, (No. 651); but it was long before obtained from Brazil by the director of the Berlin Garden, by whom it was named. It is now common in collections, where it is at once recognized by its pallid glaucous thin leaves, which look as if suffering under the attack of red spider. It is one of the most easy species to cultivate.

Brazil will doubtless be found to contain many such plants. *M. Rollissoni* (*Bot. Reg.* 1838, *t.* 40) is one, and a plant called by Descourtilz "Epidendre Jonquille," because of its colour not its smell, for it is scentless, is another.

This was also found in the Organ Mountains by Mr. Gardner, from whom I have a specimen (No. 652), and as it is probably already in this country, it may as well be named and characterized. The unpublished name of Jonquil is so likely to lead to misconception, that I make no excuse for changing it to

M. *xanthina;* pseudobulbis ovalibus tetragonis 1-2-phyllis, foliis angustè lanceolatis, pedunculis ascendentibus unifloris pedicello sterili terminatis, bracteâ ovatâ mucronatâ cucullatâ, sepalis petalisque oblongis acutis patulis subæqualibus, labello oblongo trilobo laciniis lateralibus erectis linearibus obtusissimis integris intermediâ bilabiatâ: labio superiore carnoso abbreviato truncato 5-dentato inferiore oblongo acuto.

This is very different from both *M. aromatica* and *Rollissonii.* M. Descourtilz found it on the high mountains of Ilha Grande, on the side towards the sea, and exposed to the rising sun. He does not say whether it occurs on trees or on the ground.



Miss Drake del. Pub by J Ridgway 169 Piccadilly April 1 1839 G Barclay sc

* HŌYĂ coriācĕă.

Thick-leaved Hoya.

PENTANDRIA *DIGYNIA.*

Nat. ord. ASCLEPIADACEÆ.

HOYA. R. Br. Corolla rotata, 5-fida. *Corona staminea* 5-phylla, foliolis depressis patentibus carnosis, angulo interiore producto in dentem antheræ incumbentem. *Antheræ* membranâ terminatæ. *Massæ pollinis* basi affixæ, conniventes, compressæ. *Stigma* muticum, vel subapiculatum. *Folliculi* læves. *Semina* comosa.——Frutices *aut* suffrutices, *volubiles, scandentes, aut decumbentes.* Folia *opposita, carnosa v. membranacea.* Umbellæ *laterales, multifloræ.* Wight Contributions to the Botany of India, p. 35.

H. *coriacea ;* foliis subvenosis ovalibus acutis v. acuminatis coriaceis glabris corolla intùs sericeâ. *Blume Bijdr.* 1063 ?

Suffrutex. Caulis *teres, glaber.* Folia *glabra, subcoriacea, ovalia, acuta, venosa nec nervata, suprà atroviridia, infrà pallida.* Umbellæ *multifloræ, pedunculatæ, pendulæ, axillares ;* pedicellis *glabris;* bracteis *minutis, squamæformibus, tomentosis involucratæ.* Flores *albidi ;* corollâ *rotatâ, reflexâ, intus pubescente, basi tomentosâ, laciniis linearibus acuminatis.* Corona staminea *glaberrima ;* foliolis *utrinque acuminatis.* Antheræ *oblongæ, obtusæ, membranâ brevi bidentatâ terminatæ.* Pollinia *erecta, glandulâ simplici exsulcâ.*

A very pretty stove plant, sent by Mr. Cuming to Messrs Loddiges, from Manilla; it flowered for the first time in August 1838.

The genus Hoya is a large one, the species of which abound in the southern parts of India, and are but imperfectly known to Botanists. Dr. Wight mentions twenty as found in Hindostan and the neighbouring islands; to which Dr. Blume adds nine more. The characters of the latter are so very short that it is impossible to ascertain, in the

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* Named in compliment to Mr. James Hoy, for many years the Botanical Gardener to the Duke of Northumberland at Syon House.

absence of authentic specimens, whether a plant corresponding with those characters is really the one intended; for distinctions expressed in such brief terms may apply to several different species and not be peculiar to one only. For this reason I am in doubt whether the plant now figured is really the *H. coriacea*, although I perceive no difference between it and Dr. Blume's definition of that species. It is to be hoped that this and all such points will be settled by M. Decaisne, who, fortunately for science, has undertaken the elaboration of the natural order Asclepiadáceæ for DeCandolle's Prodromus.

Fig. 1. represents an anther viewed from the inside; and fig. 2. a pair of pollen-masses adhering to their common gland.

This curious species seems to be nearly parasitical in its habits. Messrs. Loddiges grow it in the Orchideous house, on the block of wood upon which it was imported,—this is placed in a pot, and surrounded with soil. It will grow in any light soil, the chief thing in its cultivation being a warm and moist atmosphere.

It does not send out roots from its stem like the other species, and is found at present rather difficult to propagate. However, there is little doubt of its being multiplied with a little patience either by cuttings or layers.

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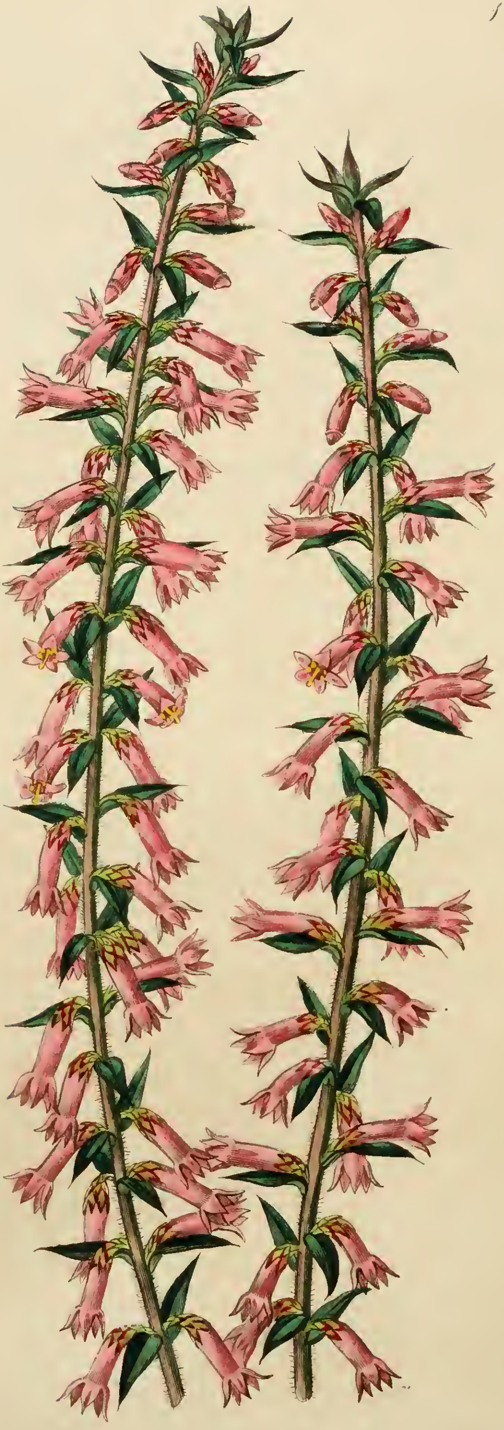


M. Drake del. Pub by J Ridgway 169 Piccadilly April 1 1839 G Barclay sc.

EPĀCRĬS imprēssă; *var.* parviflōră.

Small-flowered Pitted Epacris.

PENTANDRIA *MONOGYNIA.*

Nat. ord. EPACRIDACEÆ.
EPACRIS. Bot. Reg. vol. 18. *fol.* 1531.

E. *impressa;* ramulis pubescentibus, foliis sessilibus ovatis acuminatis pungentibus margine scabriusculis subtus obsoletè nervosis, floribus axillaribus solitariis pendulis subsessilibus, sepalis acutis margine lanulosis, corollâ cylindraceâ rectâ basi foveatâ.

E. impressa. *Lab. nov. holl.* 1. 43. *t.* 58. *R. Brown prodr.* 407. *Sweet fl. australas. t.* 4. *Lodd. Bot. Cab. t.* 1691. *Bot. Mag. t.* 3407.

β. parviflora; foliis acutissimis pungentibus margine scabris, corollæ atro-roseæ tubo cylindraceo limbi laciniis acutissimis.

The supposed species of Epacris from Van Diemen's Land are so very difficult to limit, that it is not improbable that many of them are mere varieties of each other. It must be obvious enough to any one who is acquainted with them in gardens, that the same parcel of wild seeds yields strikingly different individuals; and this is conformable to what occurs in their native haunts.

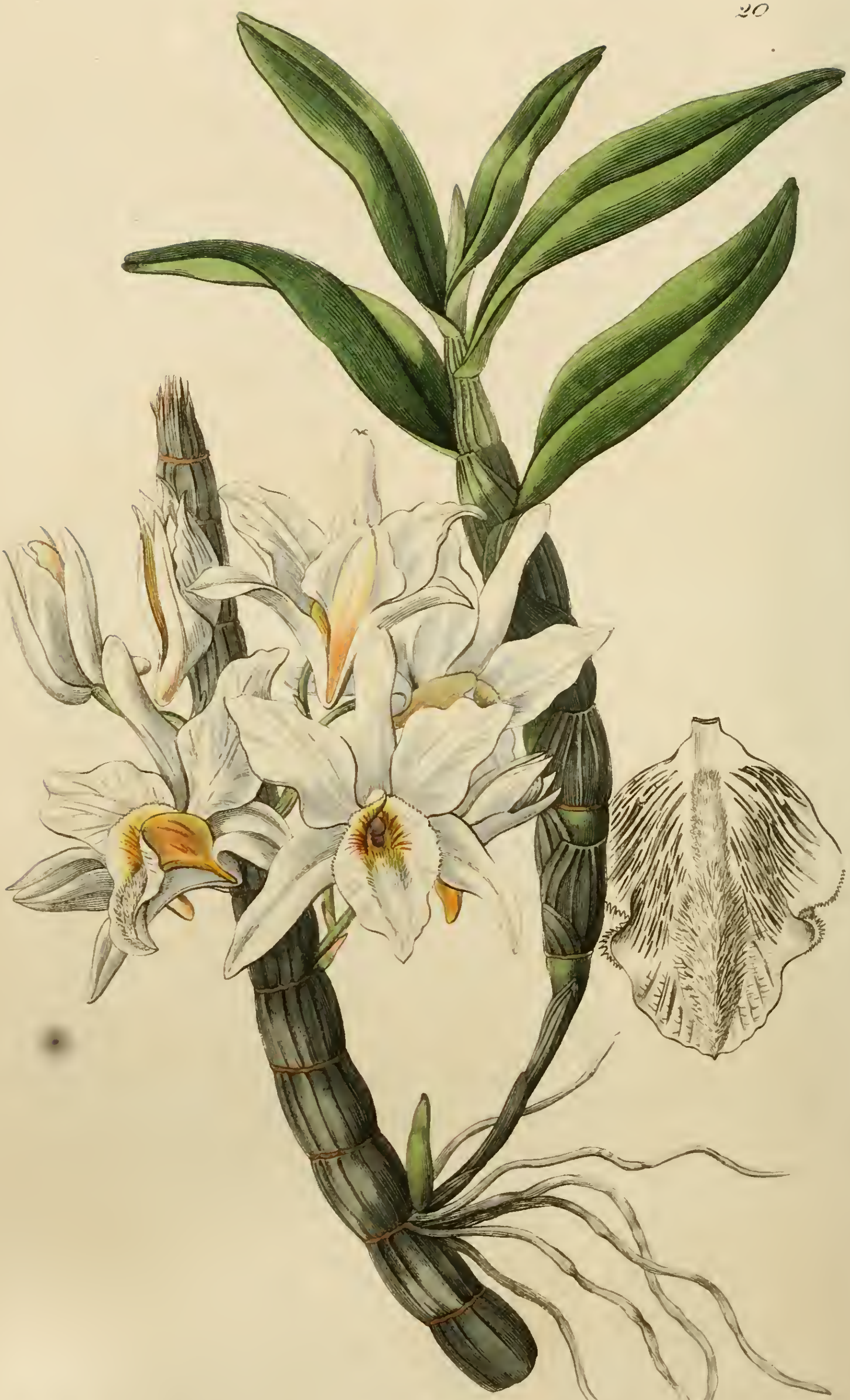
Mr. Gunn, whose accurate observations are invaluable as regards the Botany of Van Diemen's Land, and who has studied these plants with considerable attention, has lately sent over numerous wild specimens of what he regards as one species, concerning which he observes, that "the colours vary from a deep red, through all the paler shades of blush, to pure white, so that colour constitutes no distinction; size is as variable." He distinguishes four chief varieties, viz. 1. red flowering, tall; 2. red flowering, dwarf; 3. white flowering, tall; 4. white flowering, dwarf; in addition to which many others might be named.

That which is now figured was sent from New Holland to his house at York by Mr. James Backhouse, under the name of *E. ruscifolia* ; but that species, as defined by Dr. Brown, has stalked leaves, and it is to be inferred, from the way in which the definition in the Prodromus is constructed, that it has pedunculate flowers. The latter circumstance is so variable, that no importance can be attached to it; the former appears more stable ; but in the absence of authentically named specimens, it is impossible to form a correct opinion as to whether *E. ruscifolia* is, or is not, one of the varieties of *E. impressa.* The plant now figured is certainly nothing more.

The natural season for flowering, for these plants, is our winter ; they begin to blossom in August, and are not out of flower before the following March. For this reason they are so particularly well suited for the ornament of greenhouses in the winter; and those who wish to possess an abundance of flowers at that season, will find it in general less difficult to obtain them from these natives of the antipodes than from the species inhabiting the northern hemisphere, which can only be brought into bloom by great skill in the art of forcing.

Cuttings of this species should be taken off in the early part of spring, inserted in silver sand, and placed under a bell-glass. They should then be put upon a cool shelf or frame, and allowed to remain there until they begin to root. They may then be potted off in very sandy peat, and shaded for a few days from bright sunshine.

The treatment in the greenhouse should be precisely the same as is practised with other well-known species. Like the Cape heaths this is easily injured by neglecting to give it a supply of water, or by removing it carelessly from one place to another.



Miss Drake del. Pub by J Ridgway 169 Piccadilly April 1 1839 G Barclay sc

DENDRŌBĬŪM aūrĕūm; *var.* pallidum.

Golden-flowered Dendrobium ; pale variety.

GYNANDRIA *MONANDRIA.*

Nat. ord. ORCHIDACEÆ, § MALAXIDEÆ.
DENDROBIUM. Bot. Reg. vol. 7. *fol.* 548.

D. *aureum;* caulibus teretibus clavatis internodiis brevibus, foliis lineari-oblongis apice obliquis emarginatis, pedunculis subbifloris aggregatis lateralibus, sepalis lineari-ovatis acuminatis obtusis, petalis latioribus ovatis acutis undulatis, labello ovali undulato obtusiusculo indiviso medio serrulato per axim pubescente.

D. aureum. *Gen. & Sp. Orch. p.* 78.

A native of Ceylon, where it was first found by Mr. Macrae growing upon trees, near Nuera Ellia, flowering in January. It has since been frequently imported, and is occasionally seen in the collections of this country. The accompanying drawing was made in the Nursery of the Messrs. Loddiges, in March 1838.

The species varies with pale yellow and white flowers, the latter being what is here represented. In both varieties the fragrance is remarkable, forming a something intermediate between violets and primroses.

The materials from which it was first described were very imperfect, and consequently various alterations and emendations in the specific character have become necessary, and are now made.

The magnified figure represents the labellum seen from the inside.

It is propagated in the same way, and requires precisely the same treatment as D. erumenatum, described at t. 22 of this volume. The side shoot with the roots represented in the figure, if taken carefully off, would make an excellent plant.

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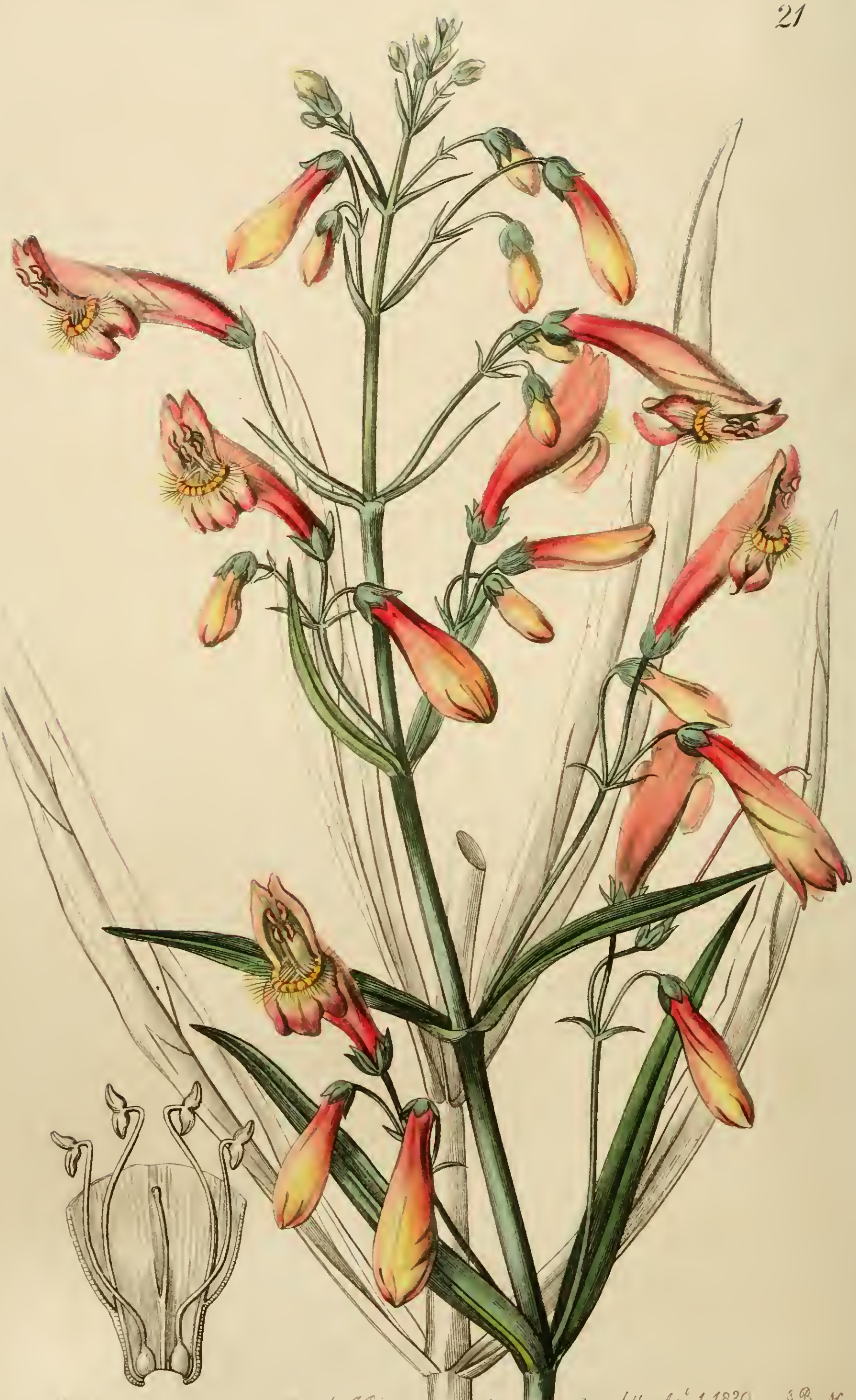

M. Drake del.t Pub by J. Ridgway 169 Piccadilly Jan 1 1830 G.B. sc

PENTSTĒMŌN barbātŭm; *var.* carneum.

Flesh-coloured bearded Pentstemon.

DIDYNAMIA *ANGIOSPERMIA.*

Nat. ord. SCROPHULARIACEÆ.
PENTSTEMON. Bot. Reg. vol. 13. *fol.* 1121.

P. *barbatum;* glaucum, foliis integerrimis radicalibus spathulatis petiolatis acutis caulinis sessilibus lanceolatis, floribus pendulis paniculatis, labio inferiore corollæ barbato revoluto tripartito.
α. foliis latioribus radicalibus magis spathulatis corollis coccineis.
Chelone barbata. *Cavan. ic.* III. 22. *t.* 242. *Bot. Register, vol.* 2. *fol.* 116.
β. foliis angustioribus longioribus, corollis carneis.

In a fresh state this pretty Mexican plant looks unlike the old Pentstemon barbatum; the colour of its flowers, especially, and its long narrow leaves giving it a peculiar aspect. Upon being dried, however, which is one of the great tests of species, its distinctions disappear for the most part, and it is no longer separable from its original type.

It was raised from seed presented to the Horticultural Society by George Frederick Dickson, Esq. and is a hardy perennial, only suffering from excess of moisture during winter, growing from two to three feet high, in any rich garden soil, and flowering in July and August.

It is increased readily by cuttings, in the autumn, or by seeds, which should be sown in pots, as soon as they are ripe, and protected from the wet in winter. The seeds will not vegetate before the spring, and as the old plants become exhausted in flowering, and are very subject to damp off in winter, it is best to raise young plants from cuttings every autumn, and also to protect the old ones with a hand-glass during winter.

It may appear necessary to offer some explanation of having changed the name of this plant from Chelone to

Pentstemon. These two genera have been divided by the former having woolly anthers, and the latter smooth ones; and supposing that this were really the essential distinction between them, the subject of this notice would belong to Pentstemon. Others have distinguished the genera by the form of the flower, ascribing to Chelone a corolla short, inflated, and contracted at the orifice, with winged seeds; and to Pentstemon a funnel-shaped corolla, with angular seeds; in this view of the subject the latter would still be the station of the present species. It is only when the genera Chelone and Pentstemon are merged into one, in which case the former name supersedes the latter, that Chelone can be the proper appellation of our plant; and this combination is, it is needless to say, any thing rather than a judicious one. I therefore agree with Mr. Bentham (*Scrophulariaceæ indicæ, p.* 7.) in striking out of the genus Chelone all the plants hitherto referred to it, with the exception of C. *Lyonii, glabra, obliqua,* and *nemorosa,* and in placing all the others in Pentstemon.

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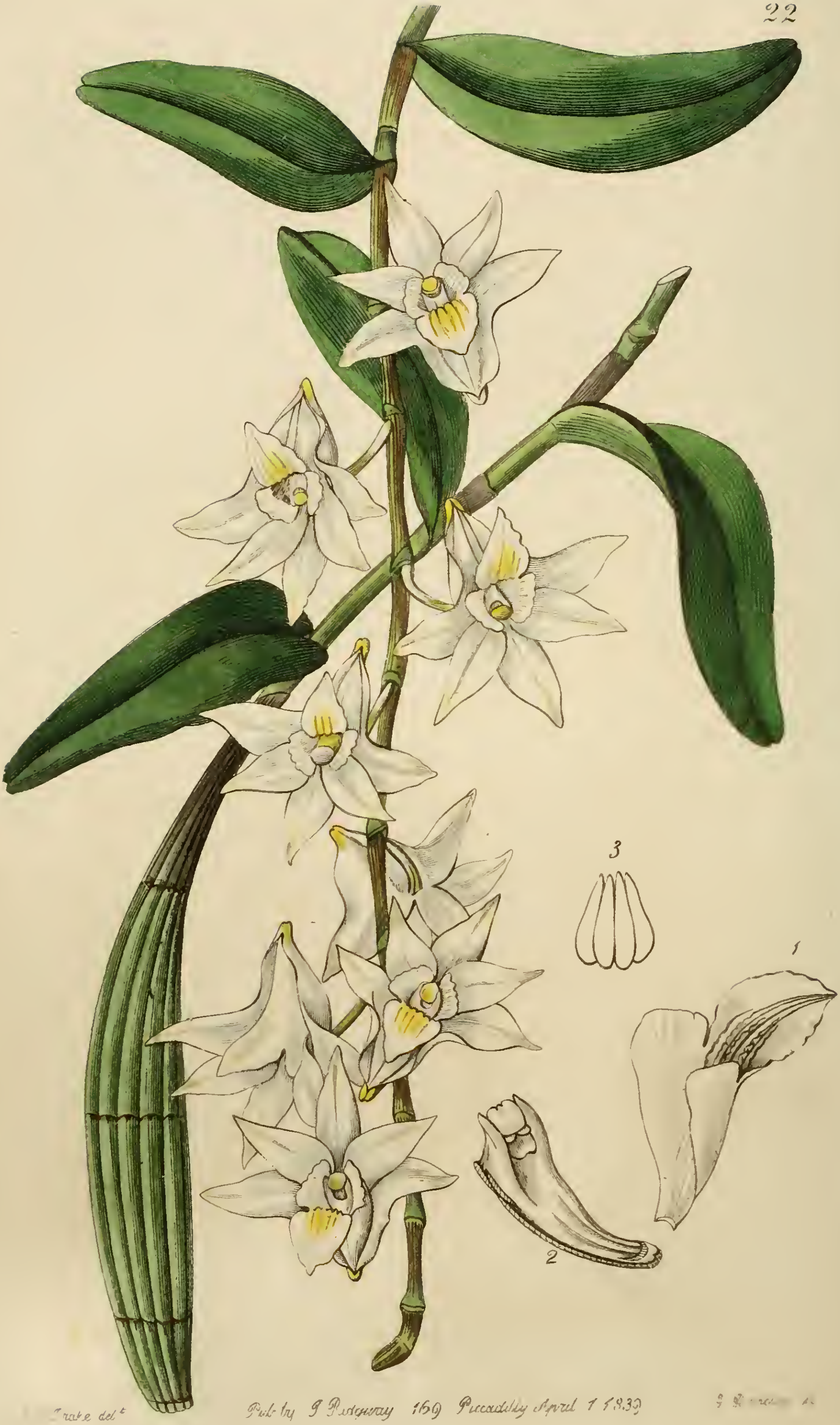


Drake delt Pub. by J. Ridgway 169 Piccadilly April 1 1839 [illegible]

DENDRŌBĬŪM crumēnātūm.

Sweet Club-stemmed Dendrobium.

GYNANDRIA *MONANDRIA.*

Nat. ord. ORCHIDACEÆ, § MALAXIDEÆ.
DENDROBIUM. Bot. Register, vol. 7. *fol.* 548.

D. *crumenatum;* caulibus cæspitosis erectis basi incrassatis teretibus, foliis ovato-oblongis obtusis emarginatis, racemo terminali (3-5) multifloro, sepalis petalisque ovatis acuminatis subundulatis conformibus, labello cucullato trilobo: lobis lateralibus truncatis intermedio ovato acuto, disco lamellato.
Angræcum crumenatum. *Rumph. herb. amb.* VI. 105. *t.* 47. *f.* 2.
Onychium crumenatum. *Blum. Bijdr. p.* 326.
Dendrobium crumenatum. *Swartz. Willd. sp. pl. no.* 20. *Hort. Trans.* VII. *p.* 70. *Gen. et Sp. orch. p.* 88.

A native of various parts of the Indian Archipelago, where it inhabits the branches of trees: this species has long been known to Botanists from the figure given by Rumphius, and by specimens which travellers, attracted by its delicious perfume, have from time to time sent to Europe.

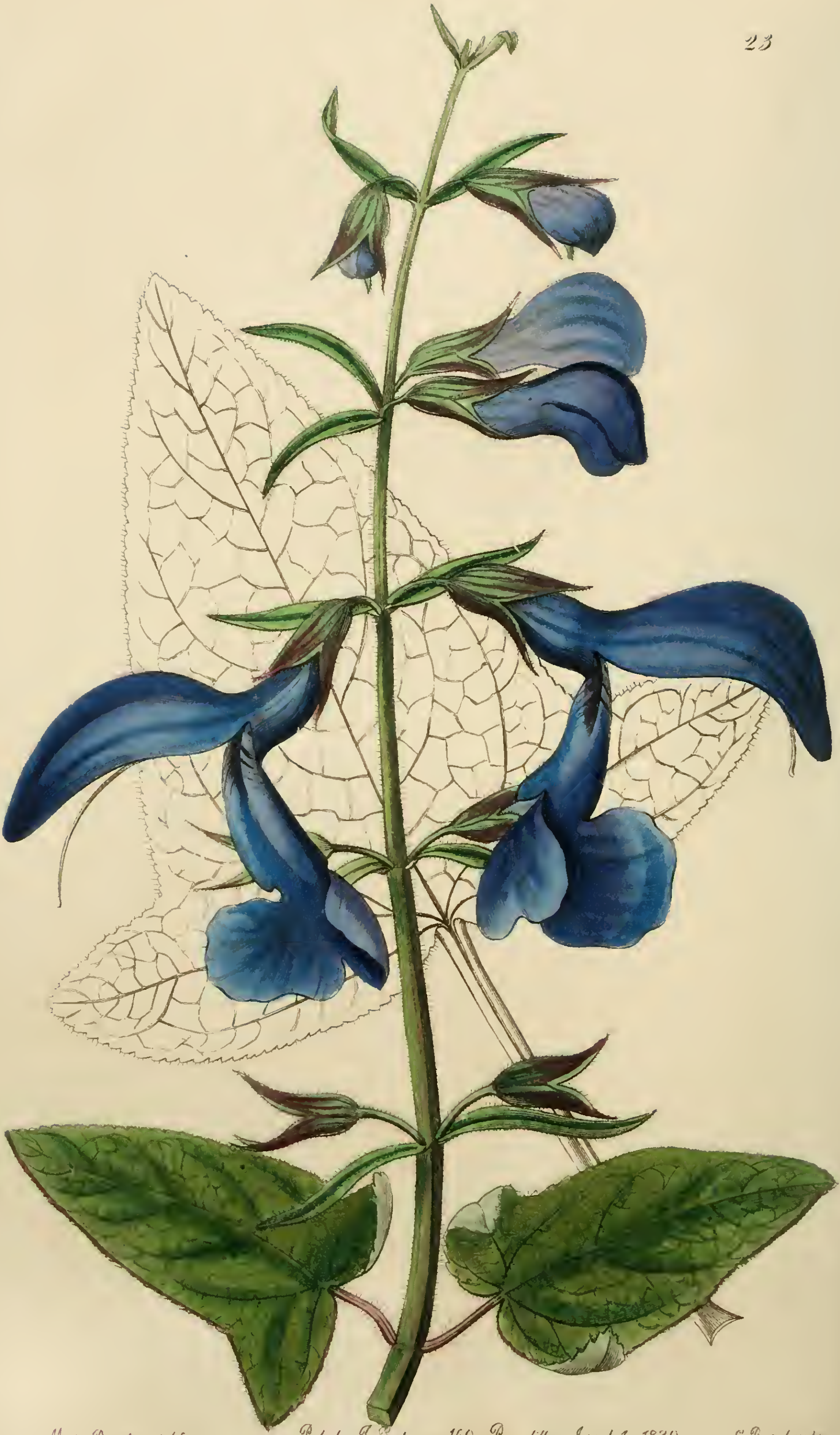
Dr. Blume found it in Java, near Batavia, and on the coast of the little island of Nusa Kambanga; and the late Sir Stamford Raffles met with it in Sumatra. Rumphius gives no locality for it, referring from the body of his work to a description in the Appendix or Auctuarium, where, however, nothing is to be found except a back reference to the body of the work; it is doubtless however an inhabitant of Amboyna. The specimen now figured was sent by Mr. Nightingale from Ceylon to his Grace the Duke of Northumberland, in whose collection at Syon it flowered in August 1837.

According to Blume it varies with white and pink flowers, and with leaves more or less oblong and coriaceous. It is one of the easiest of the genus to manage, and well repays the cultivator for the trouble he bestows upon it.

Why it is called *crumenatum*, (literally purse-shaped) I am unable to state. Rumphius, with whom the name originated, gives no explanation; but in one place he calls it A. *crumenatum*, and in another *Angræcum angustis crumenis.*

Fig. 1. represents a side view of the labellum; 2. the column, and 3. the pollen-masses.

The species is easily multiplied by taking side shoots from the old plant; sometimes young shoots will grow from the stem instead of flowers; these, if taken off carefully and laid upon warm damp moss, will, in a short time, make excellent plants. Its cultivation is simple. It belongs to that class of plants which have a period of growth and a period of rest. All that is requisite, is the temperature of the stove, and a plentiful supply of water during the growing season. When this season is past, the plant should be removed to a cooler house, or at least to the coolest part of the house, and kept perfectly dry, when its wood will harden, it will lose its leaves, and form its flower-buds. It may afterwards be brought into the warmest part of the stove, when the result will be a profusion of flowers.



Miss Drake del. Pub by J. Ridgway 169 Piccadilly April 1 1839 G Barclay sc.

SĀLVĬĂ pătēns.

Large Blue Mexican Sage.

DIANDRIA *MONOGYNIA.*

Nat. ord. Lamiaceæ, or Labiatæ.
SALVIA. Bot. Register, vol. 18. *fol.* 1554.

§ 7. Longifloræ, cœruleæ. *Bentham lab.* 276.

S. *patens ;* radice tuberosâ, foliis cordatis aut hastatis ovato-oblongis suprà pilosis subtus pubescentibus floralibus lanceolato-linearibus, verticillastris remotis subbifloris, floribus maximis, galeâ falcatâ, labelli trilobi lobis lateralibus minutis acutis intermedio transverso concavo subangulato emarginato.

S. patens. *Cav. ic.* V. 33. *t.* 454. *Bentham Labiat.* 295. *Id. in hort. trans. n. s.* II. 222. *t. X.*

S. spectabilis. *H. B. K. n. g. sp. pl.* II. 304.

Of this, the finest of the genus, a beautiful figure has been published in the last part of the Transactions of the Horticultural Society of London, together with an account of it by Mr. Bentham.

Instead of referring to that account I avail myself of a manuscript communication upon the subject, for which I am indebted to my excellent correspondent Mr. W. B. Booth, of whose drawing the annexed is a copy.

Specimens were sent me last autumn by Mr. Rogers of Southampton, Messrs. Lowe and Co. of Clapton, and Mr. Pontey of Plymouth.

"My knowledge of this handsome species of Salvia was first derived from a plant exhibited at the Meeting of the Cornwall Horticultural Society at Truro, in July, 1838, by John Penberthy Magor, Esq. of Penventon, near Redruth, to whom I am indebted for the specimens from which the accompanying figure and description were taken. It is a native of Mexico, from whence roots of it, in a dried state, were forwarded to this country in the spring of 1838, one of which shortly afterwards produced its magnificent flowers in Mr. Magor's garden, and has continued to do so in an airy greenhouse ever since. It is one of the largest blue flowering kinds yet introduced, and is a valuable addition to the splendid assortment of Mexican Salvias which we already possess.

"*Root* perennial, fasciculated, fleshy and fibrous, very much resembling that of an Alströmeria, and in this respect differing from most other Salvias with which I am acquainted. The old tubers decay after planting, and are succeeded by new ones, which are long and slender, and of a pale brown colour. *Stems* shrubby, upright and much branched, from two and a half to three feet high, but probably larger when grown in the open border. *Leaves* three-lobed, or more probably hastate, rounded at the base, with obtuse points, and finely serrated at the edges. Those of the stem have channelled hairy footstalks, from two and a half to three inches long, and are besides much larger than the rest, usually measuring about four inches in length, and nearly the same from the point of one lobe across to the other. The smaller leaves have short footstalks, and are narrow in proportion to their length; the latter varies from two to two inches and a half, while they are only about one inch and a half in breadth. All of them are of a deep green, strongly reticulated, and densely clothed with soft hairy pubescence. *Bracts* linear-lanceolate, three-nerved, and about an inch long. *Pedicels* scarcely half the length of the bracteas, round, and of a paler green than the leaves. *Calyx* somewhat campanulate, two-lipped, both of them acuminate, and tinged with brown at the point. The upper lip is larger and rather longer than the lower one, which is bifid. The *Flowers* are produced in loose, erect, terminal spikes, containing upwards of sixteen on each. They are large and handsome, of a deep purplish blue, and come in pairs at each joint. The upper lip, which extends horizontally, is much arched and compressed. It measures about two inches in length, from the calyx to the point, and its breadth in the middle of the arch, from which it diminishes both ways, is about half an inch. The edges are a pale blue. The lower lip is three-lobed, and hangs nearly at right angles with the upper, which it exceeds a little in length. The middle lobe is the largest, and measures one inch and a quarter across. It is round and spreading, somewhat undulated at the margin, and notched in the middle. The lateral lobes are revolute at the edges, and about an inch in length. The opening of the throat is marked by three small white stripes on each side. *Stamens* filiform, curved, and together with the *style*, which is rather longer and more slender, concealed by the upper lip. At the base they are slightly gibbous, and unite into a small spathulate process, which projects a little below the junction with the two bodies that attaches them to the lip. *Ovarium* four-lobed, containing one erect seed in each, and enclosed by the calyx, which contracts at the mouth after the flowers drop.

“The plant, perhaps, is seen to most advantage when cultivated in the greenhouse, its large blue flowers being liable to be injured by high winds, if exposed in the open border; although, like the other Salvias, it will grow in any rich garden soil. It increases easily from cuttings, or by seeds, which are freely produced. In the course of a short time it will no doubt become common.”

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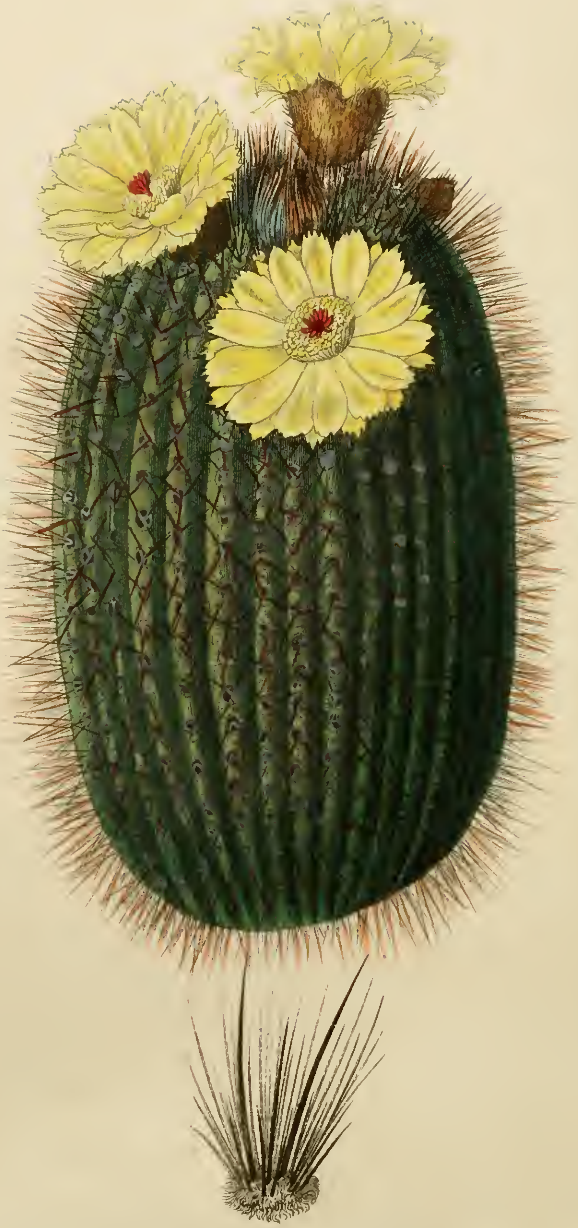

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ECHINOCACTUS Scopa.

The Broom Cactus.

ICOSANDRIA *POLYGYNIA.*

Nat. ord. CACTACEÆ.

ECHINOCACTUS. DeCand. Prodr. 3. 461. *Revue des Cactées, p.* 35.

E. *Scopa ;* caule oblongo multicostato, fasciculis spinarum approximatis basi lanatis, subulis extimis 30 40-debilibus albis centralibus 3-4 purpurascentibus rigidis, petalis biseriatis luteis apice serratis.
Cactus Scopa. *Link enum. plant. hort. berol.* ii. 21.
Cereus Scopa. *Princeps Salm-Dyck in DeCand. prodr.* iii. 464.
Echinocactus Scopa. *Hort. Berol. fide Pfeiffer Cact. p.* 66.

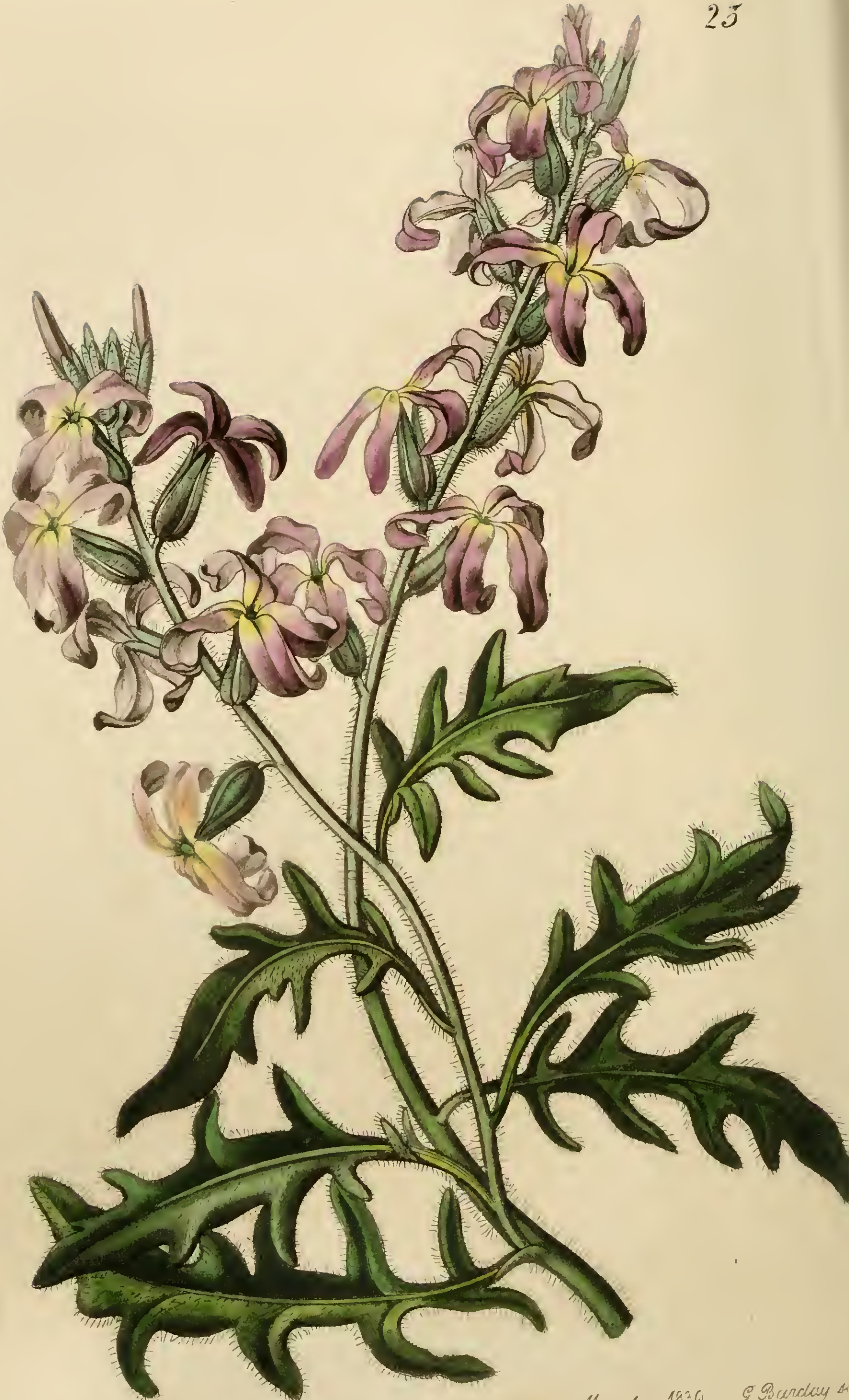
A native of Brazil, whence it was many years since sent to Prussia, and thence distributed through other parts of Europe. It derives its name of the Broom Cactus from having the hairs of its stem so long and stiff as to resemble that instrument. Dr. Pfeiffer mentions two varieties, one with all the hairs white, the other with the central ones purple, as in the accompanying figure.

The latter was taken from a specimen which flowered in the valuable collection of Thomas Harris, Esq. of Kingsbury.

Some explanation of my having placed this plant and the two species formerly represented in this work, in the same genus, seems to be required. After eliminating the Melocacti because of their producing their flowers in the woolly receptacle peculiar to those plants, the Mammillarias on account of their tubercles not being confluent into ridges, and the Opuntias because of their rotate flowers and leafy spiny sepals, there remains a considerable number of species formerly included under the old genus Cactus, which modern writers have divided between the two genera Cereus and Echinocactus. Now this partition may be effected in two ways; either the whole of the species with ribbed, and round or oblong stems may be placed in Echinocactus, and the rest in Cereus, without regard to the flowers; or all the long flowered species may be placed in Cereus, and those with short flowers in Echinocactus, without regard to habit. In either case there are difficulties, for there are species whose flowers are intermediate between the long-tubed and short-tubed forms, and others whose stems are intermediate between the round and the cylindrical, or flattened or long condition. On this account it seems to me better to take the stem as the distinctive character, because it is the most obvious, unless it should be thought better to combine Echinocactus and Cereus into one genus.

The seeds should be sown in silver-sand and very slightly covered; they should then be placed in a dry bottom heat and covered with a bell-glass. The young plants should be potted in pots of the smallest size, well drained, and chiefly in sand. Afterwards the soil used should never be too rich, and well mixed with broken stones or bricks. The plant may be preserved in a cool dry house where the temperature is very low, but a slight bottom heat in the growing season will always be found to suit it best.

It seldom sends out shoots from its sides, and therefore it is difficult to obtain cuttings; but where propagation is of more consequence than a specimen plant, it should be cut across, when the top part will form one plant, and the bottom will send out shoots from the sides of the cut. Cuttings should be treated precisely in the same way as seedlings.



Miss Drake del^t   Pub by J Ridgway 169 Piccadilly May 1 1839   G Barclay s

* MATTHĬŎLĂ odoratīssĭmă.

Sweetest Evening Stock.

TETRADYNAMIA *SILIQUOSA.*

Nat. ord. BRASSICACEÆ, or CRUCIFERÆ.

MATTHIOLA. R. Brown. Calyx erectus, basi bisaccatus. *Petala* unguiculata, limbo patente obovato aut oblongo. *Stamina* libera, edentula, longiora subdilatata. *Siliqua* teres vel compressa, elongata, bilocularis, bivalvis, stigmate connivente bilobo, lobis dorso vel incrassatis vel cornigeris. *Semina* compressa, 1-serialia, sæpiùs marginata. *Cotyledones* planæ, accumbentes. *DeCand. syst. veg.* 2. 162.

§ LUPERIA.

Petalorum laminæ oblongæ, undulatæ aut obliquæ, sordidè è flavo purpurascentes. Siliquæ apice non tricuspidatæ, stigmatum dorsis crassis gibbisve non verò in cornua excrescentibus. DC. l. c.

M. *odoratissima;* caule erecto ramoso, foliis tomentosis pubescentibusve dentatis pinnatifidisve, siliquis compressis puberulis. *DC. l. c.*
M. odoratissima. *Brown in hort. Kew.* 4. 120. *Bot. mag. t.* 1711.
Hesperis odoratissima. *Poir. suppl.* iii. 195.
Cheiranthus odoratissimus. *Bieb. fl. taur. cauc.* 2. 122. *suppl.* 444.

This is one of the many interesting plants which have ceased to be cultivated, and have resigned their place to newer species. It is one of those Stocks which DeCandolle called Luperiæ, or sad coloured, because their flowers have in all cases a dull heavy appearance, in consequence of the mixture of purple and yellow in the petals, but which in general possess the curious property of becoming deliciously fragrant towards evening.

In a wild state this plant inhabits the calcareous mountains of the Crimea, stony places of the eastern Caucasus, and the rocky ground about Tiflis in Iberia, and also of the sea-coast of the province of Baku.

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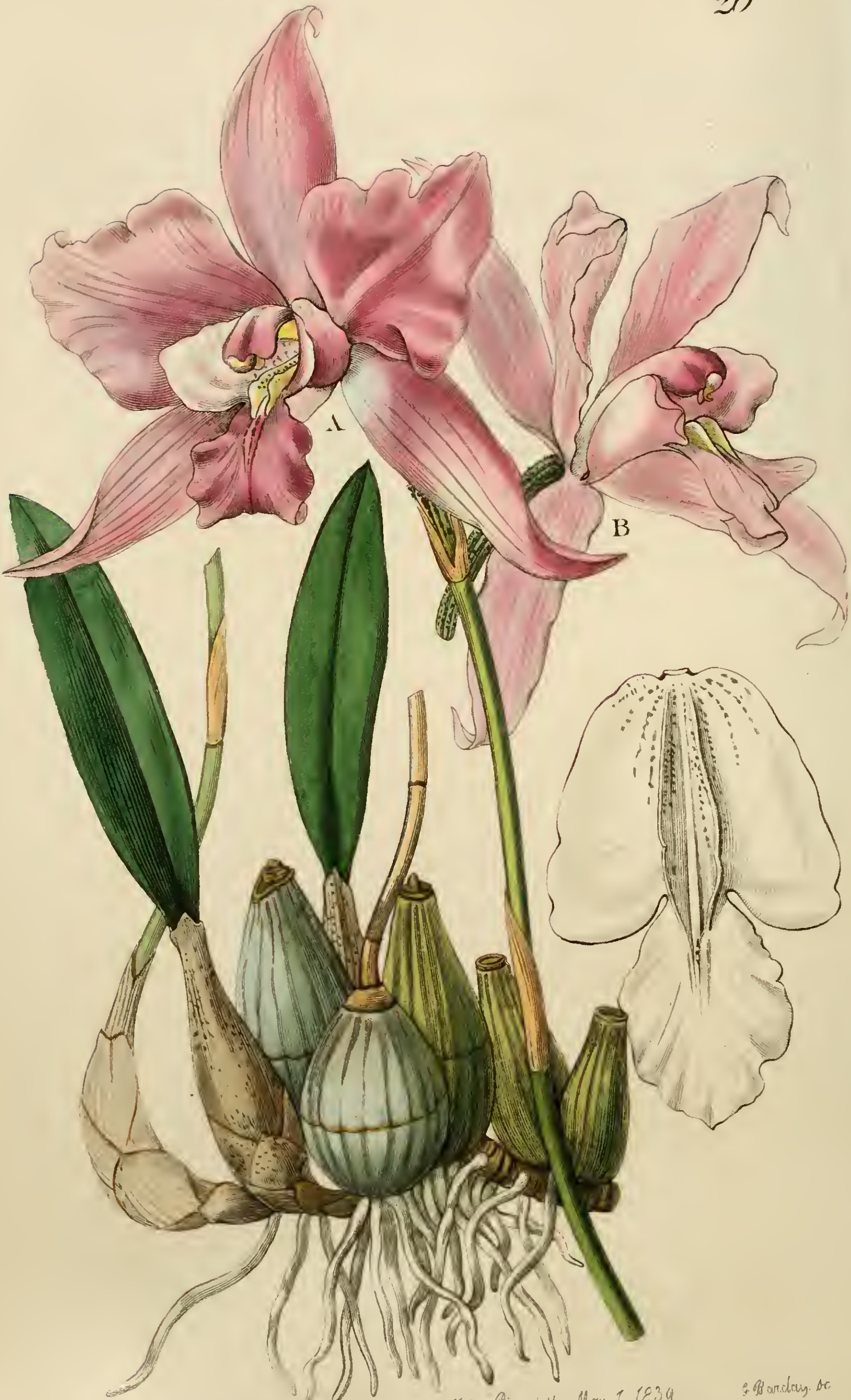
* Named after Peter Andrew Matthioli, the laborious commentator upon Dioscorides.

When cultivated it is a half-hardy biennial, growing from 15 to 18 inches high in any strong rich soil, and flowering about May.

The seeds should be sown about the end of May, in pots, and placed in a cold frame; the plants, when large enough, should be transferred to small pots, putting two or three plants into each pot, and shifting them afterwards, as they require it; and finally, they should be placed in an airy part of the green-house during winter, for the damp or a few degrees of frost soon destroy them.



Miss Drake del.t Pub by J. Ridgway 169 Piccadilly May 1 1839 G. Barclay sc

LǼLĬĂ furfurācĕă.

Scurfy-stalked Lœlia.

GYNANDRIA *MONANDRIA.*

Nat. ord. ORCHIDACEÆ, § EPIDENDREÆ.
LÆLIA. Botanical Register, vol. 21.*fol.* 1751.

L. *furfuracea;* pseudobulbis ovatis striatis submonophyllis, foliis angustè oblongis erectis acutis scapo multò brevioribus, scapo unifloro (?) tereti, bracteis oblongis membranaceis acutis, sepalis lanceolatis acuminatis patentissimis, petalis subrhombeis lanceolatis undulatis sublobatis, labelli trilobi bilamellati lobis lateralibus erectis rotundatis truncatis intermedio oblongo revoluto, ovario glandulis nigris furfuraceo.

This plant was imported by Mr. Barker of Birmingham, from whom I received it in November 1838, as a new species. It is very like L. autumnalis, represented in the next plate, but its pseudo-bulbs are merely ovate and slightly furrowed, instead of having a long neck and being deeply furrowed; the leaves are solitary or in pairs, and not in twos or threes; they are erect and straight, not spreading and curved; the flowers have little or no smell; the petals are so much more undulated as to appear lobed, and they are distinctly rhomboidal, and finally the ovary is closely covered with black mealy glands. It would seem moreover that the scape does not bear more than one flower instead of several, but of this I cannot so well judge.

It was found near Oaxaca, by Count Karwinski, and is probably not uncommon in collections, large quantities having been received by various persons from Mexico, especially by the Horticultural Society, who have distributed it among their fellows.

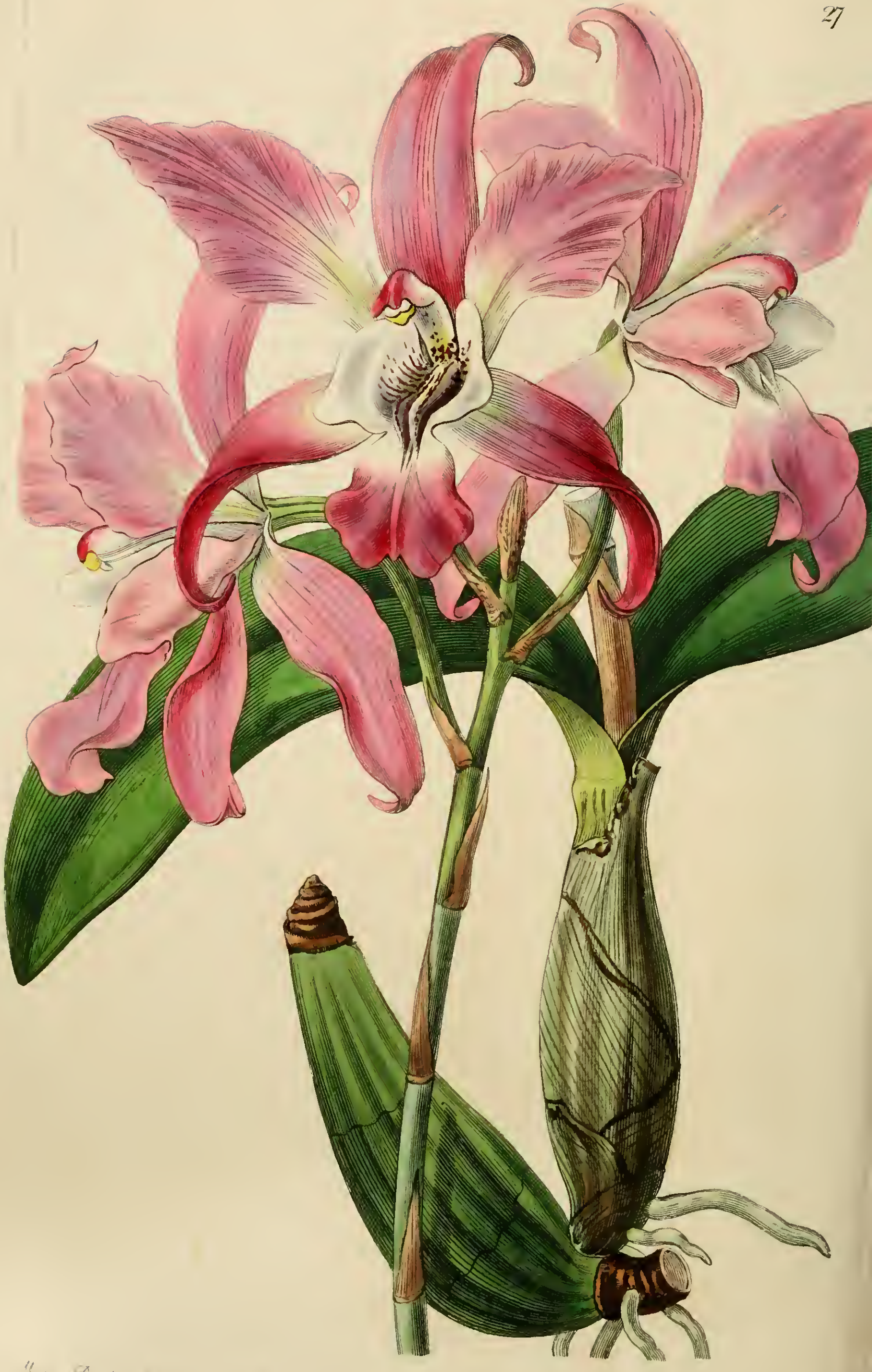
A. and B. are varieties differing in colour, but apparently in nothing more. The species is figured in the next plate to

L. autumnalis, in order that the differences between the two species may be the more readily perceived.

The cultivation of this species, in so far as our knowledge extends, is rather difficult. It probably proceeds from the nearly uniform temperature of our stoves in this country, differing so much from the temperature to which plants are subjected, at considerable elevations in tropical regions.

There are many plants which belong to this order, the peculiar treatment of which is now perfectly understood, and which consists in removing them from the stove, and placing them in a cooler house for several months every season; some of the species of Bletia are examples of this.

The present species should be cultivated in a cooler house than is generally used for Orchidaceous plants, and subjected to considerable variations of temperature by being at certain seasons kept in the greenhouse.



Miss Drake del. Pub. by J. Ridgway 169 Piccadilly Mar. 1 1840 G. Barclay sc.

LÆLĬĂ autumnalis.

Autumnal Lælia.

GYNANDRIA *MONANDRIA.*

Nat. ord. ORCHIDACEÆ, § EPIDENDREÆ.
LÆLIA. Botanical Register, vol. 21. *fol.* 1751.

L. *autumnalis;* pseudobulbis ovatis teretibus costatis apice attenuatis 2-3-phyllis, foliis oblongo-linearibus patentissimis scapo multò brevioribus, scapo tereti apice subsexfloro, bracteis oblongis membranaceis acutis, sepalis lanceolatis acuminatis patentissimis, petalis oblongo-lanceolatis undulatis, labelli trilobi bilamellati lobis lateralibus erectis rotundatis truncatis intermedio oblongo-lanceolato apice reflexo, ovario glabro.
Bletia autumnalis. *La Llave et Lexarz. nov. veg. descr.* 2. 19.
L. autumnalis. *Gen. et Sp. Orch. p.* 115. *Bateman Orch. Mexic. et Guatemal. t.* 9.

A very fragrant and beautiful plant, imported from Mexico of late years, and now not uncommon in gardens. A considerable number of it has been given away among the Fellows of the Society by order of the Council of the Horticultural Society of London.

The specimen now figured was taken from a plant which flowered at Woburn, and which was sent me by the Duke of Bedford.

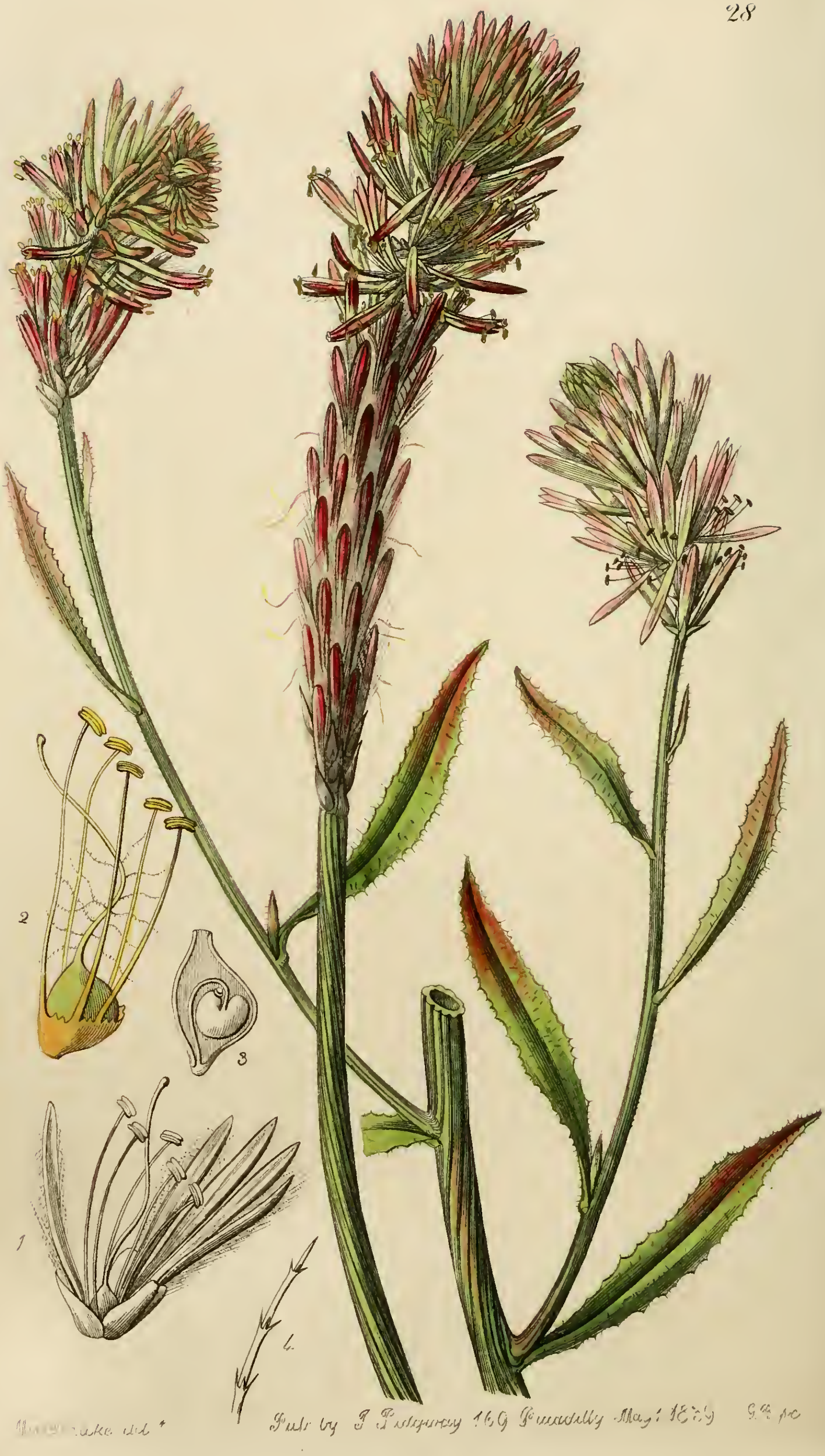
I have nothing to add to the following account extracted from Mr. Bateman's magnificent work on the Orchidaceous plants of Mexico and Guatemala.

"The genus Lælia may be regarded as one of the most ornamental of its tribe, since pleasing colours, graceful habit, long duration, and delicious perfume, in short, all the essentials of floral beauty, seem to be combined in its various species. Of these, five or six are already known, of which the one now represented, however charming it may be, is, perhaps, the least interesting; for it is far surpassed by *L. grandiflora* (the Flor de Corpus of Mechoacan) in the magnitude of its flowers, and by *L. anceps* and some unpublished species, in the brilliancy of its colours. Being found at a considerable elevation they all thrive best in a moderate temperature, and require to be high-potted, as by that means the roots are more likely to be retained in a healthy state, and are better able to withstand the extremes of heat and moisture which, even in the most carefully conducted establishments, will sometimes occur, and which we have found excessively injurious to Lælias, Cattleyas, and species of some allied genera. In winter they should be very sparingly watered, and kept in almost a dormant state. *L. autumnalis* flowers both in this country and its own, at the season which its name implies."

In the Garden of the Horticultural Society its cultivation is found extremely simple. When plants are received they are tied to a block of wood, and kept perfectly dry until they begin to send out roots, and manifest other signs of growth. They are then freely syringed two or three times a day, and this practice is continued until the growing season is past. They are then removed to a cooler house with a drier atmosphere, in which they are allowed to winter, and when this season is over, the above treatment is again renewed.

It is multiplied in the usual way; the front shoots make the best plants.

28



Miss Drake del.t Pub by J. Ridgway 169 Piccadilly May 1 1839 G.B. sc

* TRICHĬNĬŪM alopecuroīdĕūm.

Foxtail Trichinium.

MONADELPHIA *PENTANDRIA.*

Nat. ord. AMARANTHACEÆ.

TRICHINIUM. R. Br. Flores hermaphroditi, tribracteati. Perigonium 5-phyllum, foliolis linearibus. *Stamina 5*, basi connata; filamenta filiformia; antheræ biloculares; staminodia interjecta nulla. *Ovarium* uniloculare, uniovulatum; stylus simplex; stigma capitatum. *Utriculus* evalvis monospermus, perigonii foliolis basi conniventibus, apice patulis, plumosis inclusus. *Semen* lenticulari-reniforme; testâ crustaceâ. *Embryo* annularis, periphericus, albumen farinaceum cingens; *radiculâ* centrifugâ.——Herbæ *annuæ v. perennes, in* Nova Hollandia *intra et extra tropicos provenientes;* foliis *alternis*, floribus *terminalibus capitatis v. spicatis*, bracteis *scariosis nitentibus.* Endl. gen. plant. no. 1963.

T. *alopecuroideum;* caule ramoso sulcato glabro, foliis lanceolatis subtùs scabriusculis integris vel denticulatis, spicis cylindraceis elongatis, bracteis rotundatis, calycibus herbaceis sursum calvis acutis, rachi pilosâ, cyatho staminum dentato.

T. alopecuroideum. *Lindl. in Mitchell's Australian expeditions, vol.* ii. 13. *ed.* 2.

The singular genus to which this species belongs is exclusively Australian. Six species only are described by Dr. Brown, but many more are known, and their number will probably be found considerable. It is remarkable for the great quantity of delicate knotted hairs with which the densely spiked or capitate flowers are covered.

That now figured, the first which has been known to flower in Europe, was raised from Swan River seeds by Robert Mangles, Esq. of Sunning Hill; I possess wild specimens from the same country, for which I am indebted to

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* τρίχινος, composed of hairs, in allusion to the shaggy flowers.

May, 1839. L

Captain James Mangles, and to Mr. Toward, gardener to H.R.H. the Duchess of Gloucester. It was also met with by Major Sir T. L. Mitchell, during his important expedition to the Rivers Darling and Murray in the year 1836, and was named by me in the note to his account of the proceedings of his party.

It is a half-hardy annual, flowering abundantly in the open border during the summer, and although not appearing very pretty in a plate, is sufficiently striking to deserve cultivation, for the surface of its flowers is glossy like those of the cockscomb.

Fig. 1. is a magnified view of a single flower; fig. 2. represents the cup, stamens and ovary, whose style is clothed with straggling hairs, one of which is seen magnified at fig. 4.; and fig. 3. exhibits a section of an ovary, with the ovule and the funiculus, from whose end it hangs suspended.

At Swan River are two other species, whose beauty would make them most desirable plants to introduce; as neither of them are described, I beg to name the one after my excellent friend Captain James Mangles, R.N. to whom I am indebted for a fine collection of dried New Holland plants, and the other after His Excellency Sir James Stirling, who has done so much for the introduction of new plants to England during his government of the Swan River colony.

Tr. *Manglesii;* caulibus simplicibus ascendentibus sulcatis foliisque spathulatis acutis undulatis glabris, capitulis maximis ovatis, bracteis lineari-lanceolatis acuminatis, sepalis apice erosis et serrulatis calvis basi pilis densissimis lanatis, cyatho staminum integerrimo brevissimo, stylo glabro.——Heads three inches across. Flowers pink at the tips, silvery at the base.

Tr. *Stirlingii;* caulibus flexuosis ramosis puberulis, foliis lineari-oblongis acutissimis sessilibus, capitulis sphæricis subsolitariis, bracteis subrotundis cuspidatis, sepalis truncatis ad apicem usque villosis intus basi lanatis, cyatho staminum brevissimo integerrimo.——Heads rather less than an inch and a half across, silvery, just tinged with pink.

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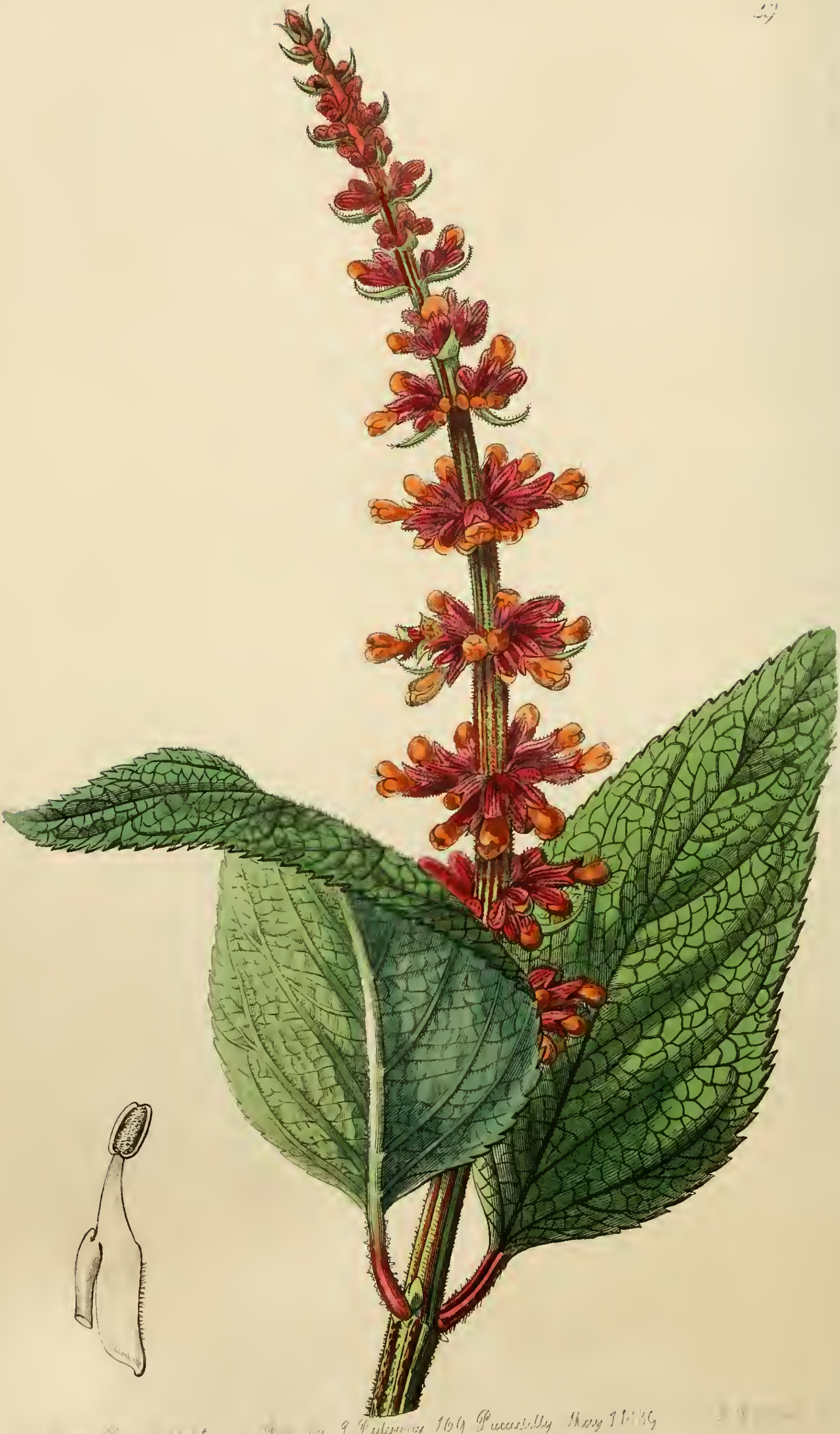

[illegible] Pub. by J. Ridgway 169 Piccadilly May 1 1836 [illegible]

SĀLVĬĂ confertiflōră.

Close-flowered Sage.

DIANDRIA *MONOGYNIA.*

Nat. ord. Lamiaceæ, or Labiatæ.
SALVIA. Bot. Register, vol. 18. *fol.* 1554.

§ VIII. Calosphace—*Erianthæ.* Bentham lab. 273.

S. *confertiflora ;* caule fruticoso tomentoso, foliis petiolatis ovato-oblongis acutiusculis crenatis basi cuneatis suprà rugosis subtùs albo-tomentosis, floralibus nanis ovatis acuminatis reflexis v. deciduis, racemis elongatis, verticillastris densè multifloris, calycibus corollisque fulvosanguineis lanatis his duplò tantùm longioribus ; limbi conniventis lobo intermedio integro, connectivis deflexis dilatatis abbreviatis connatis hinc ciliatis, stylo glabro.
S. confertiflora. *Bentham labiat.* 276.

This Sage is one of the many Brazilian species which deserve introduction to our gardens. It was found near Rio Janeiro by Mr. Macrae, while in the service of the Horticultural Society, and in other parts of the empire by Sellow and Pohl. It belongs to a small section of the genus with short woolly flowers, the only other species of which, as yet in gardens, is the *Salvia leucantha* of Mexico.

Its flowers are so bright and numerous as to render the plant a conspicuous object during the autumn months, at which time it blossoms. Whether or not it is sufficiently hardy to live out of doors in the summer is uncertain.

The figure was taken from a plant presented to the Horticultural Society by John Dillwyn Llewellyn, Esq.

The leaves have rather a heavy disagreeable smell of a peculiar nature, resembling perhaps a combination of the Dead-nettle and Sorrel.

This species may be cultivated either in a greenhouse, or planted out in a rich border during the summer months. It is however seen in its greatest beauty when grown in a house which is intermediate between a greenhouse and stove;—that is, where the temperature in winter and spring is never below 55° of Fahr. It delights in a rich soil, composed of equal parts of loam and peat, mixed with a portion of manure and sand, and will require, when growing luxuriantly, a great quantity of water.

Of all the species of Salvia this is the most easy both to cultivate and propagate. If cuttings of the young shoots are inserted in sand, they will soon make strong plants.

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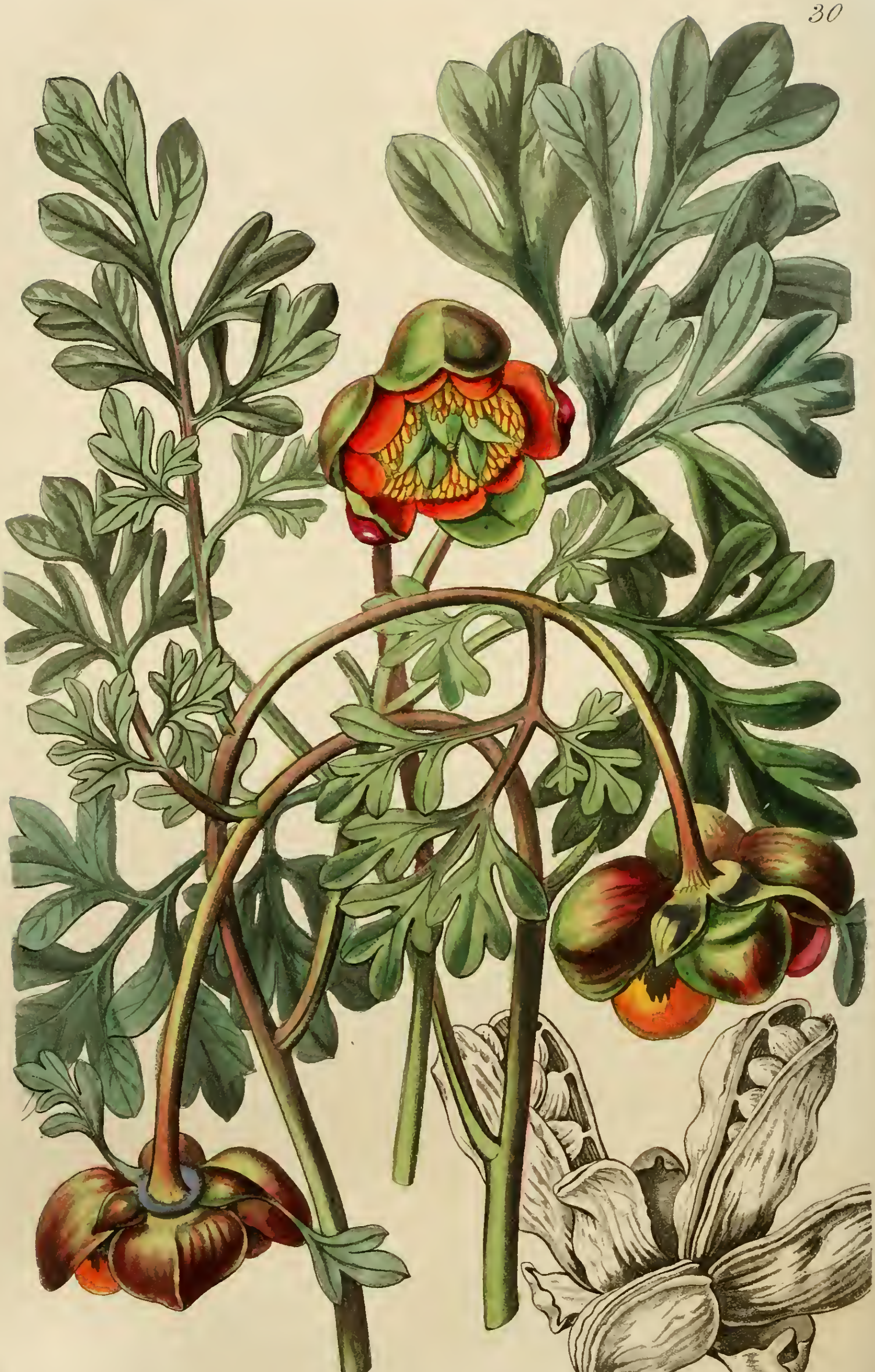

Miss Drake delt. Pub by J. Ridgway 169 Piccadilly June 1 1839 G. Barclay s

* PÆŎNĬĂ Brōwnĭī.

Douglas' Californian Pæony.

POLYANDRIA *DI-PENTAGYNIA.*

Nat. ord. RANUNCULACEÆ.
PÆONIA. Botanical Register, vol. 1. *fol.* 42.

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§ ONÆPIA.

P. *Brownii;* herbacea, carpellis 5 glaberrimis erectis, foliis utrinque glabris biternatis, foliolis ternatìm divisis pinnatifidisve laciniatis, sepalis subrotundis convexis petalis subrotundis coriaceis longioribus.

P. Brownii. *Douglas in Hook. Fl. Bor. Amer.* 27. *Torrey and Gray Flora of North America,* 1. 41.

Petala *circiter sex, coriacea, subrotunda, sanguinea, margine lutea, sepala breviora.* Discus *carnosus, elevatus, lobatus.* Folliculi 5, *quorum pars tantum perfecta, coriacea, rugosa, lævia, obovata.* Testa seminum *sicca, nec succulenta.*

This extremely rare and very curious plant was introduced several years ago by the Horticultural Society, to which it was sent by Mr. Douglas. It is a singular instance of a genus hitherto exclusively Asiatic or European, appearing in the New World under a form different from its ordinary state, and yet as it seems too similar to be separated. Since the discovery of this by Douglas, a second species has been found in Upper California by Nuttall. The two form a section of Pæonia, characterized by short leathery petals, a lobed fleshy disk, and a dry not succulent seed coat.

Douglas found it near the limits of perpetual snow, on the subalpine range of Mount Hood in North West America; according to Torrey and Gray it was met with by Nuttall east of the Blue Mountains of Oregon, not in subalpine situations.

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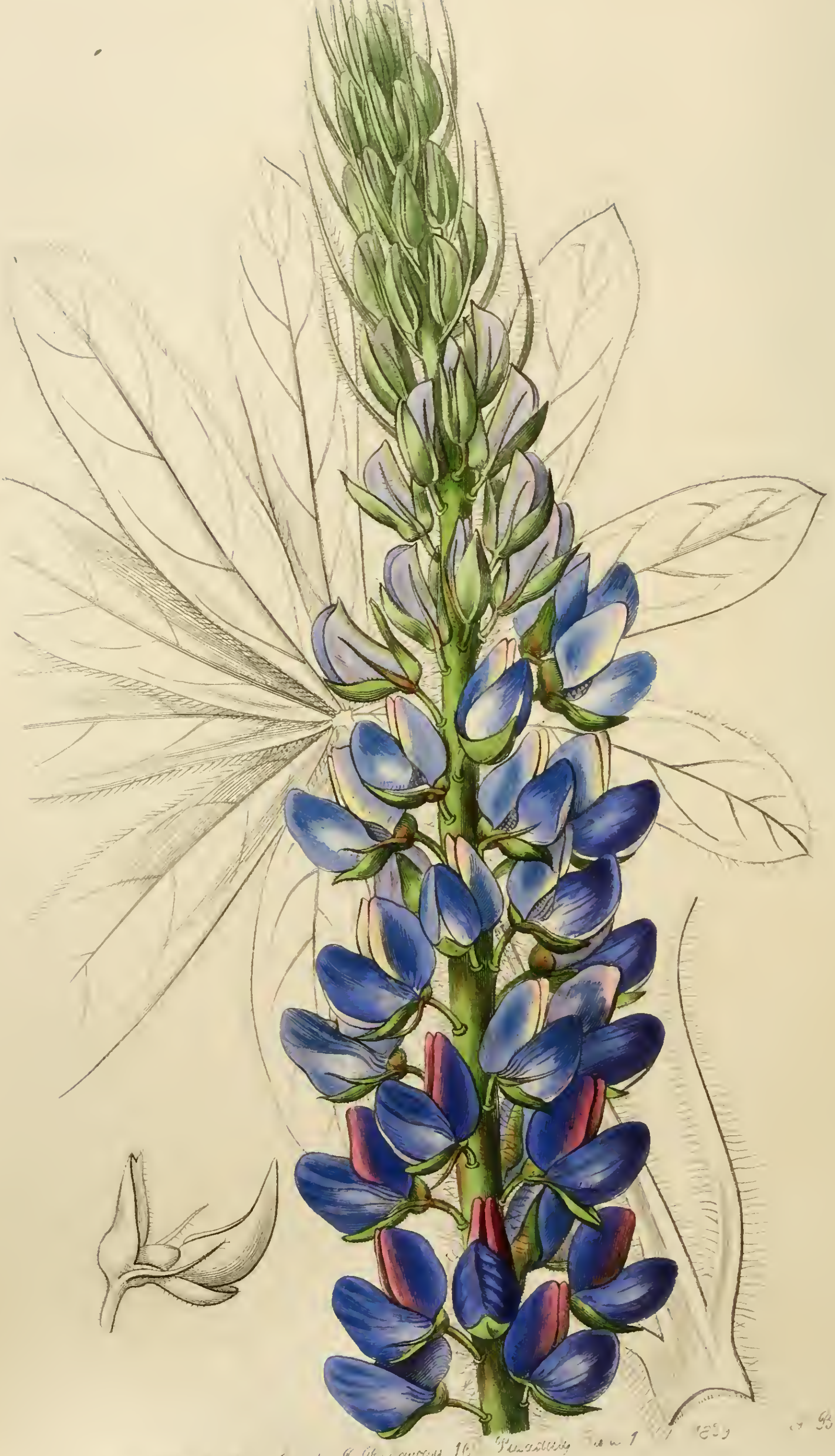
* See Botanical Register, fol. 1208.

It is a hardy perennial, with tuberous roots like those of the common Pæony, but much smaller; it grows little more than a foot high, and flowers about the middle of May. It may be increased like the other Pæonies, either by seeds or by division of the roots.

It seems rather difficult to keep, for the old roots sent home by Douglas, as well as all the young ones raised from seeds and given away by the Horticultural Society, have died, the only plant now alive being that in the Society's Garden, where it grows vigorously, planted in a mixture of silver sand, peat, and a small portion of loam, more than one-half of the whole mixture being sand. It is kept in a north aspect, where the sun only shines on the plant a few hours during the middle of the day in summer, and not at all in winter, and where the temperature is not subject to very great variation during summer. The plants which perished died chiefly during the hotter part of summer and autumn, when fully exposed to the sun. It seems necessary that they should be covered in winter with a hand glass to keep the roots rather dry.



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LUPĪNŬS Hartwĕgĭī.

Mr. Hartweg's Lupine.

DIADELPHIA *DECANDRIA.*

Nat. ord. LEGUMINOSÆ, § PAPILIONACEÆ.
LUPINUS. *Bot. Reg. vol.* 6. *fol.* 457.

L. *Hartwegii;* annuus pilosus, stipulis setaceis, foliolis 7-9 oblongis obtusis, racemo elongato multifloro, bracteis setaceis plumosis floribus inapertis duplò longioribus, bracteolis calycis setaceis longissimis, carinâ imberbi.

Caulis 2-*pedalis, erectus, pilis longis vestitus.* Folia *etiam pilosissima, laxè tamen nec densè.* Bracteæ *citissimè deciduæ, more* L. plumosi *longissimæ.* Flores *cærulei, vexillo medio roseo ; carinâ imberbi.*

This very fine plant differs from *L. plumosus* not only in its annual duration and brilliant blue flowers, but also in its obtuse green leaves and much longer hairs. It was sent to the Horticultural Society by Mr. Hartweg, after whom it is named, and it has since been extensively distributed among the Fellows of the Society.

It was found growing in corn-fields, and appears to be different from all the Mexican species described by Schlechtendahl in the Linnæa.

It is a very fine half-hardy annual, growing from two to three feet high, and flowering freely from the end of June until destroyed by frost in the autumn, if planted in any good rich soil.

The seeds should be sown in pots about the beginning of April, and placed in the greenhouse for a few days until the plants come up, when they should be removed to a cold pit or frame, and when large enough should be potted into small pots, putting four plants into each pot, and finally they should be planted out, when the danger of the May frosts is over ; a little frost destroys them when young, but not when old in the autumn.

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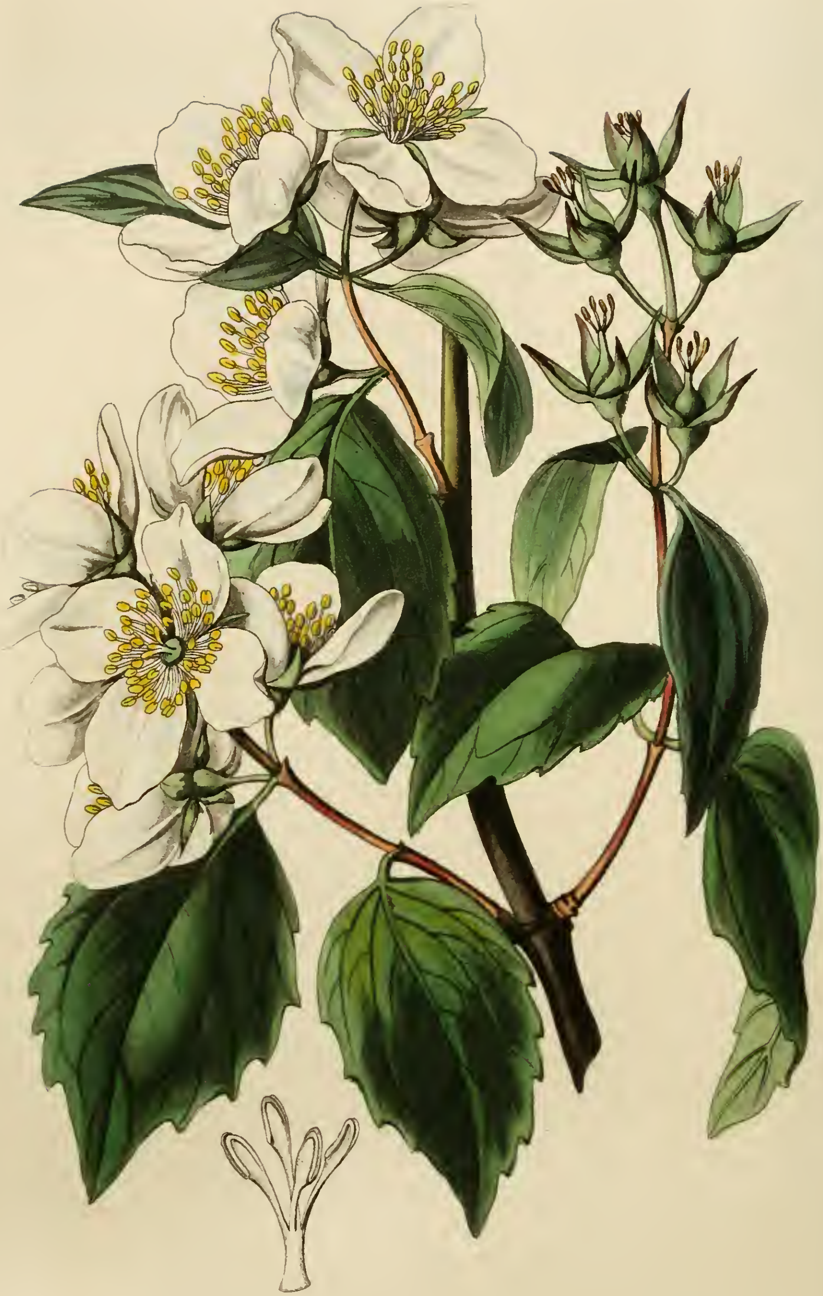

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PHILADĔLPHŬS Gordoniānŭs.

Gordon's Philadelphus.

ICOSANDRIA *TETRAGYNIA.*

Nat. ord. PHILADELPHACEÆ.
PHILADELPHUS. Botanical Register, vol. 7. *fol.* 570.

P. *Gordonianus ;* ramis pendulis testaceis, ramulis pubescentibus, foliis ovatis acutis grossè dentatis subtùs pilosis, racemis compactis 5-9-floris terminalibus, ovario semisupero, stylo 4-partito, calycibus fructus patentissimis.
P. Gordonianus. *Bot. Reg.* 1838, *misc. no.* 23.

A hardy shrub found by Mr. Douglas on the banks of the Columbia River, where it forms part of the underwood. It was raised many years since by the Horticultural Society, and has been extensively distributed. It is the latest species that flowers, grows from eight to ten feet high, and has almost a weeping appearance in consequence of producing numerous slender side shoots.

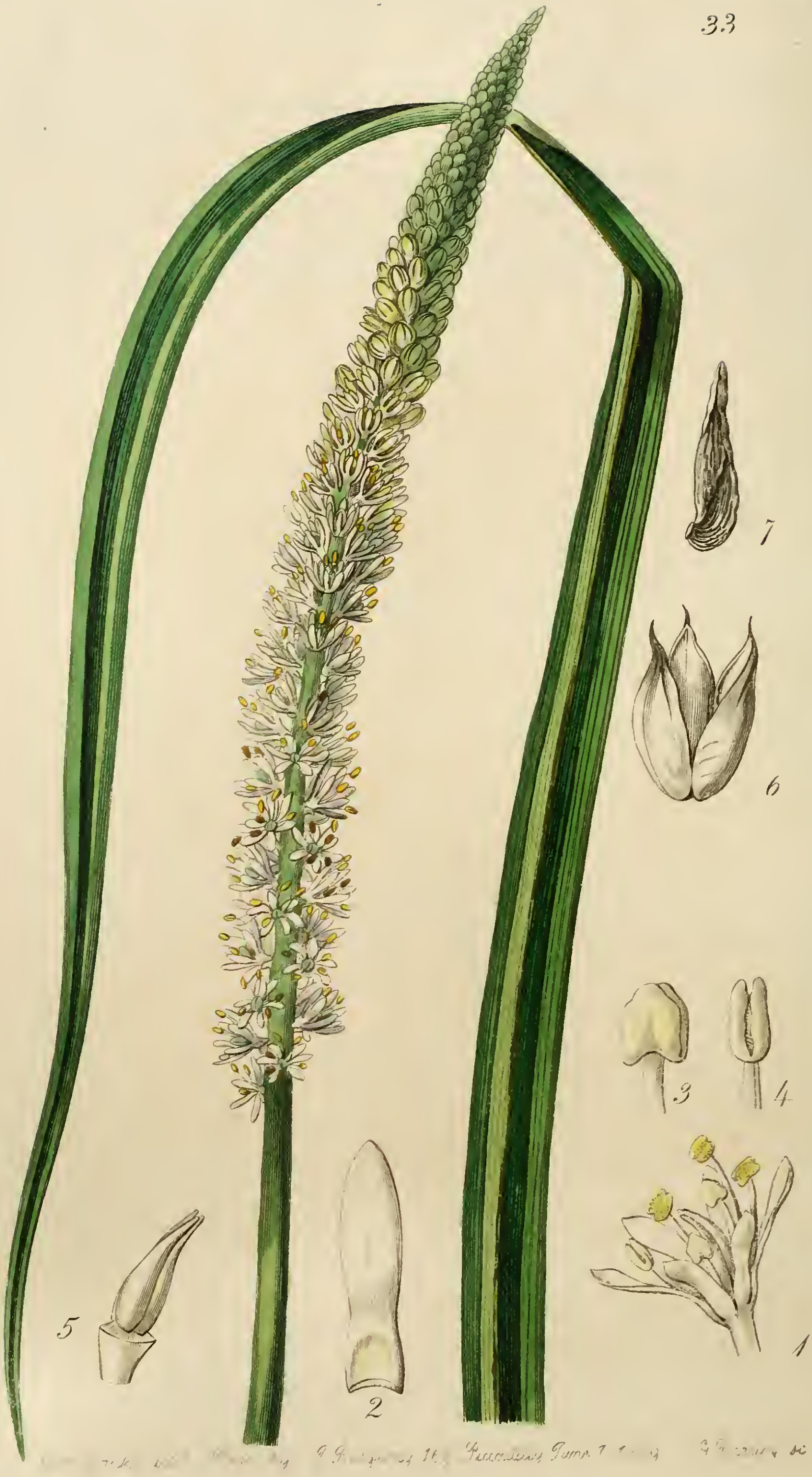
The leaves are bright green, rather small, ovate, pointed, 3-nerved at the base, and coarsely serrated. The flowers are large, pure white, in close bunches of from five to nine, are nearly scentless, and are produced in such great profusion that this is one of the handsomest of hardy deciduous shrubs. The fruit is large, smooth, with the lobes of the calyx broad and nearly horizontal.

It is readily known by its small deeply serrated leaves, its nearly superior fruit, its broad spreading calyx, and by the compact manner in which its flowers are arranged.

It is a very showy shrub, growing in any soil, and very hardy, not having been at all injured by the severe winter of 1837-8. It flowers about the end of July, and may be increased from seeds or by cutting off the half-ripened shoots about August, when they strike as freely as the common

Willow. This is the latest of all the species in flower, and the most showy.

It has been named in compliment to Mr. George Gordon, who has the charge of the Hardy department in the Garden of the Horticultural Society, and who has paid particular attention to the difficult genus of which this forms a part.



[illegible] J. Ridgway & Sons Piccadilly June 1 [illegible] G. Barclay sc.

* ASAGRÆĂ officinālĭs.

Spike-flowered Asagræa.

HEXANDRIA *TRIGYNIA.*

Nat. ord. MELANTHACEÆ.

ASAGRÆA. Flores polygami, racemosi, nudi. *Perianthium* 6-partitum, foliolis linearibus aveniis subæqualibus, basi excavatis nectarifluis, staminibus æqualibus. *Stamina* alternè breviora; antheris cordatis, quasi unilocularibus, post dehiscentiam clypeolatis. *Ovaria* 3, simplicissima, in stigma obscurum attenuata. *Folliculi* tres, acuminati, chartacei; seminibus acinaciformibus, corrugatis, alatis.——Herbæ *bulbosæ,* foliis *gramineis,* floribus *parvis, pallidis, densè racemosis.*

ASAGRÆA *officinalis.*
Veratrum officinale. *Schlecht. in Linnæa,* vi. 45.
Helonias officinalis. *Don. in Edinb. new phil. journ. Oct.* 1832. p. 234. *Lindl. fl. med.* 586.

Herba *bulbosa,* foliis *gramineis, subcarinatis, viridibus, margine asperiusculis, scapi* 4-5-*pedalis longitudine.* Scapus *teres.* Racemus *semipedalis, densissima, stricta, spicæformis.* Flores *albi, basi bracteâ rotundatâ suffulti.* Antheræ *luteæ, basi cordatæ, bivalves, uniloculares, demùm clypeatim peltatæ (loculis binis apice confluentibus).*

This half-hardy bulbous plant was received by the Horticultural Society from Mr. Hartweg, who found it in Mexico, in the neighbourhood of Vera Cruz, where it was called *Sabadilla.* It is no doubt the plant found by Deppe and Schiede on the eastern side of the Mexican Andes, near Barranca de Tioselo, by the Hacienda de la Laguna, in rocky places, and is probably that from which the Sabadilla seeds of commerce are, at least in part, procured.

It is however neither a Veratrum as Schlechtendahl sup-

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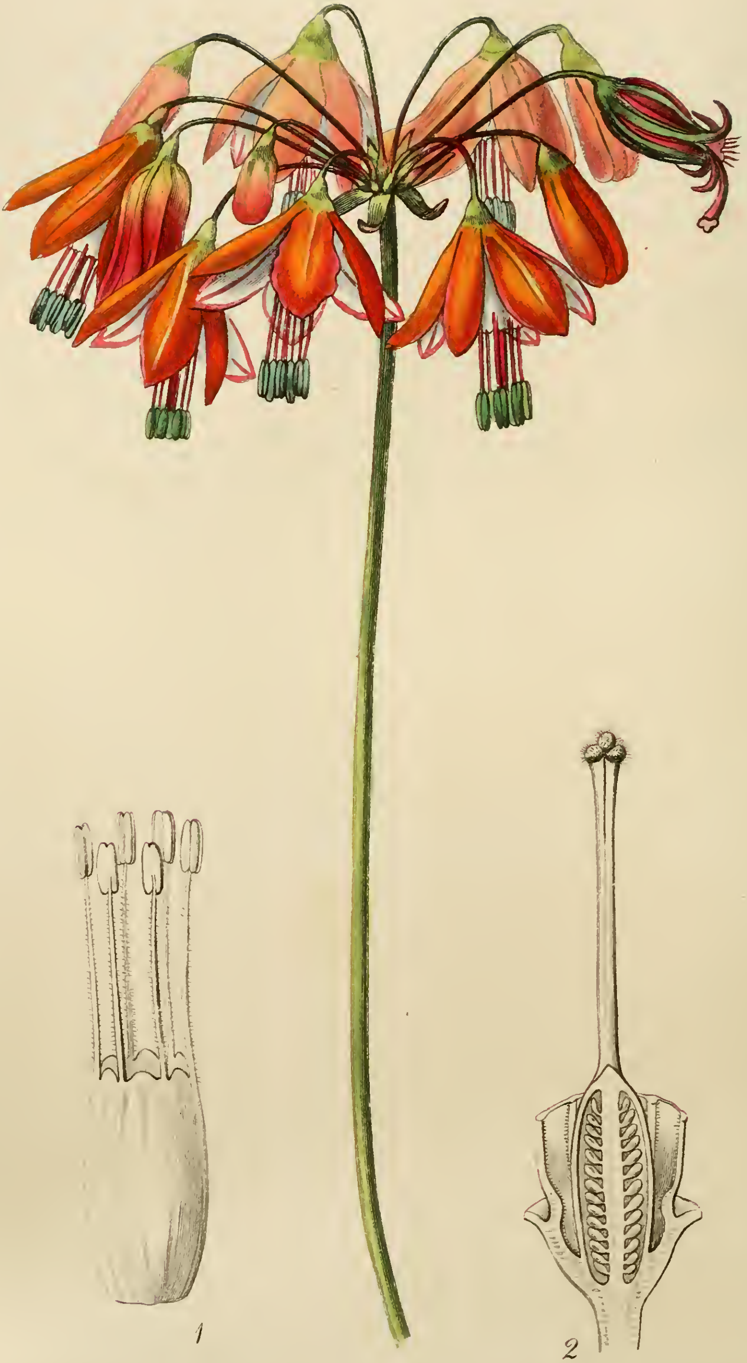
* In compliment to Dr. Asa Gray, the author of a treatise upon North American Melanthaceæ, and, in conjunction with Dr. Torrey, of the Flora of North America, now publishing.

posed, nor a Helonias as Professor Don has imagined, but a quite distinct genus of Melanthaceæ, differing from both those genera and from all others with which it is necessary to compare it, in the segments of the perianthium having a nectarifluous excavation at the base. Independently of this it differs from Helonias and Xerophyllum in having clypeolate anthers, from Amianthium in its short stamens, and from Schœnocaulon in its whole habit.

In cultivation it is a half-hardy bulb, growing about four or five feet high in any strong rich soil, and flowering in September or October. It requires the same treatment as Tigridia pavonia.

Fig. 1. is a flower magnified; 2. one of the sepals; 3. 4. different views of the anther; 5. the ovary; 6. a ripe fruit; 7. a seed.



Miss Drake del.

Pub. J. Ridgway 169 Piccadilly June 1 1839

[illegible] sc.

* BĒSSĔRĂ ĕlĕgāns.

Elegant Bessera.

MONADELPHIA *HEXANDRIA.*

Nat. ord. LILIACEÆ.

BESSERA. Schultes fil. Umbella. Perianthium pendulum, campanulatum, hexapetaloideum, æquale. *Stamina* basi in urceolum epipetalum connata, æqualia, regularia, exserta. *Ovarium* sessile, loculis polyspermis; ovulis ascendentibus; *stigma* obsoletè trilobum, pubescens. [*Capsula* erecta, perianthio stipata, septicido-trivalvis. *Semina* compressa, testâ membranaceâ atrâ.]

B. *elegans;* urceolo stamineo inter stamina unidentato, filamentis pubescentibus styli longitudine.

This charming plant was originally found by Count Karwinsky at Saltepec in Mexico; it was first sent to this country by John Parkinson, Esq. H. B. M.'s Consul in Mexico, and from a specimen in the possession of John Rogers, Esq. Jun. of Sevenoaks, the accompanying drawing was made. Recently a large packet of what is believed to be it has been received by the Horticultural Society from Mr. Hartweg.

A second species has already been published by Mr. Herbert in this work in the year 1832, under the name of *Pharium fistulosum* (fol. 1546), but the latter generic name must give way to that of Bessera, which dates from January, 1829. Mr. Herbert's species apparently differs not only in the colour of the flowers, but in having the staminal cup untoothed, the filaments smooth, and the style longer than the stamens.

I did not see the leaves of this species; Mr. Rogers describes them to me as two, two feet long, cylindrical with a

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* So named after Dr. Besser, Professor of Botany at Brody, and author of an enumeration of the plants Volhynia, Podolia, &c.

furrow on one side, deep green not glaucous, and about twice as thick as the scape, which is two feet high. He also states, that when first the anthers burst the pollen is bluish grey, but it becomes yellow after a day or so exposure to light and air; and the pollen of the first flowers was darker than that of the later ones. The first flower expanded September 12th, and it was still in beauty in October. The bulb is tunicated, obconical, and about the size of a Crocus.

Little is as yet known of the habits or cultivation of the plant. Although perhaps hardy it is more advisable that it should be grown in pots in the greenhouse, or planted out in a conservatory. If planted out in a cold pit or frame, it should be well protected in severe weather. If it ripens its seeds, they ought to be sown in light soil, and in order that they may germinate more readily they may be plunged in bottom heat, in a frame that is nearly exhausted. As the first year's bulbs will be small they ought not to be disturbed in the seed pot, and should be kept perfectly dry after the growing season is past. As soon as they are pretty strong, they may be potted off in a mixture of peat and sand, and then the only thing to be attended to will be to give them a free supply of water while growing, and to keep them perfectly dry and cool when the leaves wither and drop off, until the next season.

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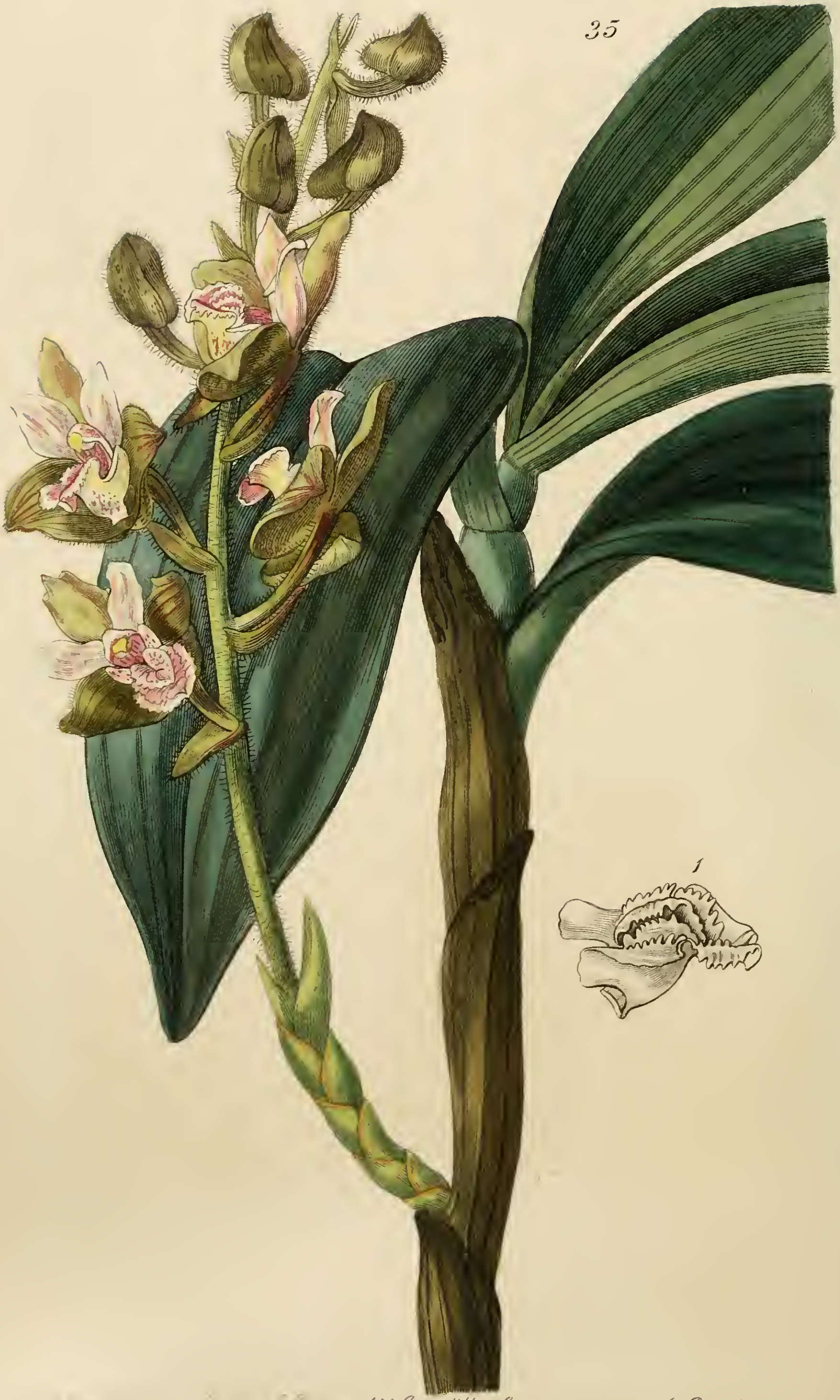


[illegible] Ridgway 169 Piccadilly June 1 1839 G Barclay sc

ĔRĬĂ ferrugĭnĕă.

Rusty Eria.

GYNANDRIA *MONANDRIA.*

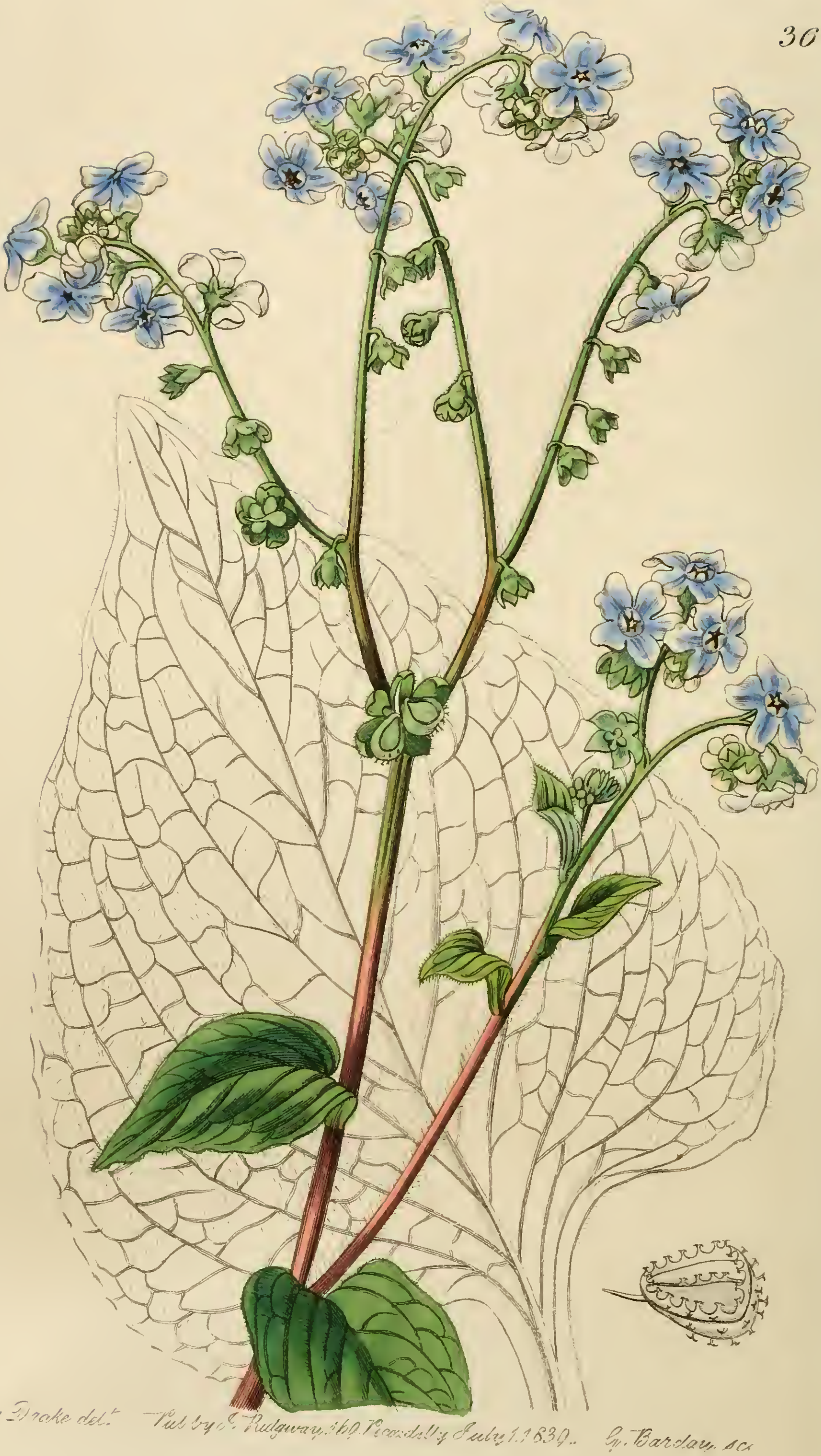
Nat. ord. ORCHIDACEÆ, § MALAXIDEÆ.
ERIA. Botanical Register, vol. 11. *fol.* 904.

E. *ferruginea*; caulibus teretibus articulatis vaginatis, foliis oblongis obtusis, racemo erecto laterali multifloro basi squamato, bracteis ovatis acutis ovario villosissimo brevioribus, labelli lobis lateralibus erectis truncatis intermedio ovato serrato subplicato: disci cristis 4 dentatis intermediis carnosis incurvis.

This very distinct species was imported from Calcutta by Messrs. Loddiges, and flowered at Hackney in March, 1838. I have no information as to the part of India which it inhabits.

It is not handsome, but it is very distinct, has a particularly deep green foliage, and the smooth delicate pink petals form a striking contrast with the coarse green shaggy sepals. The lip (*fig.* 1.) is most singularly crested, and looks more like the edge of some cowrie shell than the petal of a flower.

It is propagated like all other orchidaceous plants, namely, by divisions of the rhizoma. The soil used in its cultivation is turfy peat, well mixed with broken bricks; and the pot should have plenty of drainage. Its treatment generally is similar to that which has been frequently recommended for plants of this description. The house in which it is grown must be well shaded from bright sunshine in summer.



Miss Drake del.t Pub by J. Ridgway 169 Piccadilly July 1. 1839. G. Barclay sc.

CYNOGLŌSSŪM cœlestīnum.

Blue and White Hounds-tongue.

PENTANDRIA *MONOGYNIA.*

Nat. ord. BORAGINACEÆ.

CYNOGLOSSUM, Linn. Calyx 5-partitus. *Corolla* hypogyna, infundibuliformis, fauce fornicibus 5 clausâ, limbi quinquefidi laciniis obtusis. *Ovarium* 4-lobum. *Stylus* simplex. *Stigma* subcapitatum. *Nuces* 4, distinctæ, depressæ, echinatæ, umbilico dorsali styli basi pyramidatæ insertæ.——Herbæ *in extratropicis, primis hemisphæræ borealis obviæ;* racemis *sæpiùs ebracteatis, nunc bracteatis,* bracteis *interdum foliiformibus.* Endlich. gen. 650.

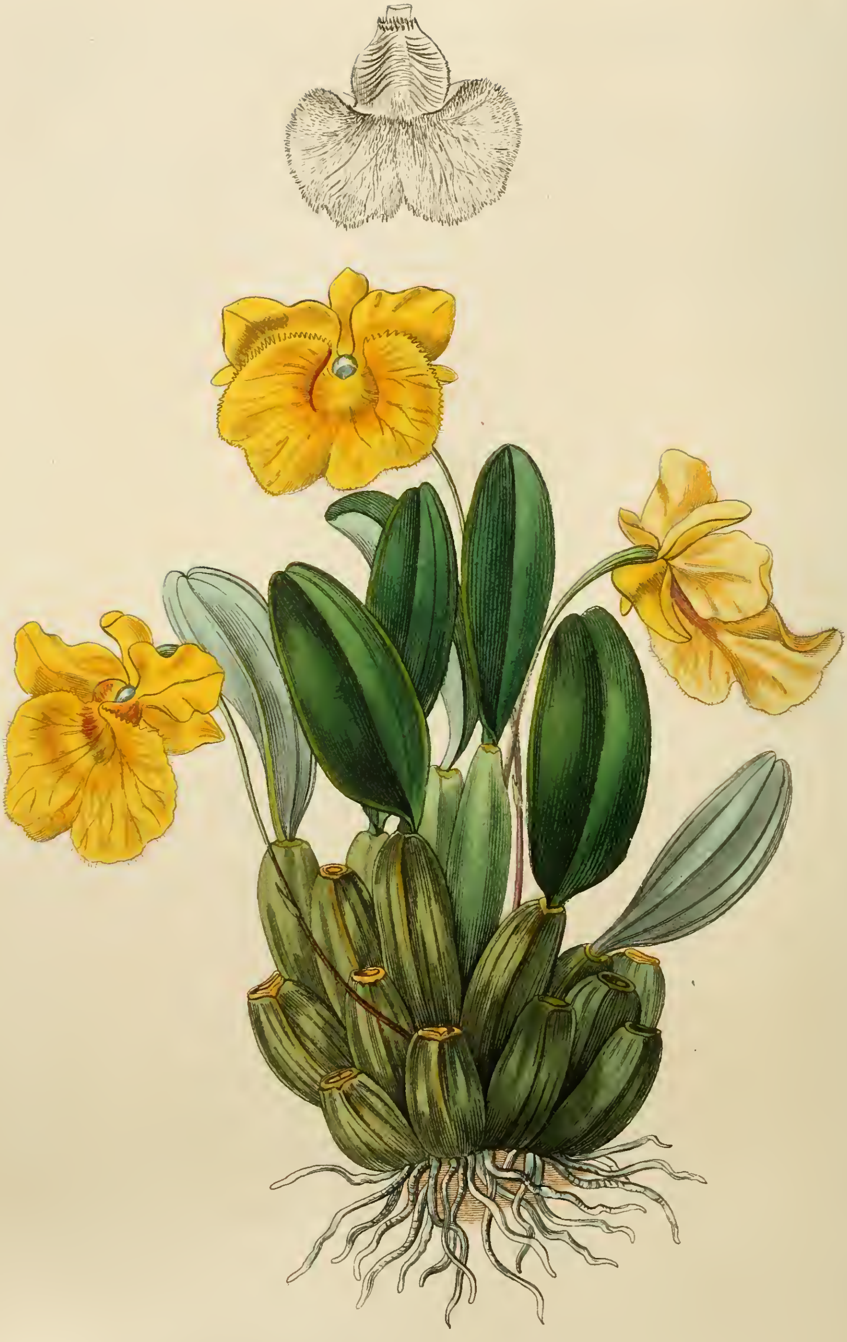
C. *cœlestinum;* pubescens, foliis caulinis ovatis acutis basi cuneatis radicalibus cordatis ovatis longè petiolatis, racemis ebracteatis, calycis laciniis tubum corollæ æquantibus, nucibus marginatis: basi et margine (et interdum lineâ dorsali) glochidiatis.

Herba *perennis,* 1½-2-*pedalis, pubescens, subscaber, maleolens.* Folia radicalia *cordata, ovata, suprà callis subepidermoidalibus scabra;* caulina *ovato-oblonga, acuta, basi cuneata, nullo modo amplexicaulia.* Racemi *sæpiùs bisbifidi, ebracteati, flore solitario subsessili in dichotomiis.* Calyx *pubescens, laciniis obtusiusculis tubi corollæ longitudine.* Corolla *cyanea, margine alba; laciniis undulatis obtusis, dorso pallidis.* Nuces *membranaceo-marginatæ; cavitate dorsali glabrâ v. glochidibus quibusdam minutis sparsis aut lineatis conspersâ; margine lateribusque glochidibus majoribus obsitis.*

This plant is a hardy biennial, and probably inhabits some part of the North of India, though it does not appear in the collections of either Dr. Royle or Dr. Wallich. It was raised by the Horticultural Society from seeds presented by John Nimmo, Esq. of Bombay, and flowered for the first time in August, 1838. It is a very pretty species, but its smell is heavy and unpleasant.

It differs from *C. uncinatum* in its fruit, and in the leaves not being at all acuminate; from *C. microglochin, longiflorum,* and *grandiflorum* in the cauline leaves not being rounded at the base; and from *C. glochidiatum* in its smaller flowers, and much less hairy, as well as broader and more cordate leaves.

The seeds should be sown at *two* different seasons, the first about the beginning of June, the second about a month later. The plants should be treated in the same manner as the common Giant or Brompton Stocks, part of them being placed where they are to remain, and the rest being potted for protection in a cold pit or frame during the winter.



Miss Drake delt   Pub by J. Ridgway. 169. Piccadilly. July 1st 1839   G Barclay sc.

DENDRŌBĬŪM Jenkīnsiī.

Captain Jenkins's Dendrobium.

GYNANDRIA *MONANDRIA.*

Nat. ord. ORCHIDACEÆ, § MALAXIDEÆ.
DENDROBIUM. Botanical Register, vol. 7. fol. 548.

D. *Jenkinsii;* pseudobulbis aggregatis oblongis tetragonis monophyllis, foliis oblongis coriaceis marginatis retusis, pedunculis subradicalibus unifloris vel racemosis, sepalis ovatis obtusis petalis multò minoribus, labello cucullato rotundato basi parùm producto limbo dilatato serrato villoso emarginato.
D. Jenkinsii. *Wallich. in litt.*

This pretty plant has been sent by Dr. Wallich to many persons in this country, and is now by no means uncommon. The accompanying drawing was made in September, 1838, from a plant in the possession of Messrs. Loddiges, and I have since received it from other places. To Sir Charles Lemon I am indebted for the following account of the species from the pen of Dr. Wallich.

"This elegant little Orchidaceous plant grows in large tufts on trees. The pseudo-bulbs are densely aggregated on a creeping rhizoma, oblong, marked with one or two rings and vestiges of sheaths, about an inch long, each bearing an oblong, shining, coriaceous, obtuse, sometimes slightly retuse, sessile leaf, about $1\frac{1}{2}$ inch long, sometimes a little longer. Flowers spreading, large, yellow, inodorous, on long and slender peduncles, geminate from the side of the pseudo-bulb on a very short cylindric common peduncle, having a few scales at its base. Partial peduncles filiform, two or three inches long. Sepals and petals obtuse; the latter broadest, oval. Lip very large, reniform, retuse, slightly pubescent and ciliate, measuring nearly an inch across, almost sessile, a little channelled at the base, otherwise spreading flat.

"I received the plant from Capt. Jenkins in November, 1836. He had obtained it at Gualpara. It flowered finely at this garden in the middle of March following. I have since had abundant supplies from the same liberal and indefatigable source.

"I am very happy in dedicating this very distinct species to my valued friend Capt. Jenkins, to whom this garden, the cause of botany, and science generally, are deeply indebted.

"The flowers are larger than those of D. aggregatum of Roxburgh, to which it bears a slight resemblance."

The species shews in a striking manner the impropriety of generically separating the pseudo-bulbous Dendrobia from those with slender stems, notwithstanding the dissimilarity in their appearance. Here we have a plant with the pseudo-bulbs consisting, in the majority of instances, of a single internode, hardened, become four-cornered, and as dissimilar as possible from the same part of the stem of Dendrobium Pierardi; but in D. aggregatum, figured in this work, t. 1695, several internodes (3) together constitute a body altogether intermediate in nature between a pseudo-bulb and ordinary stem, and similar transitions from one to the other occur in D. densiflorum, fol. 1828, and D. Griffithianum, all which are so nearly allied to each other that a person unacquainted with all of them may possibly mistake one for the other. To prevent this the following distinctions in the labellum will be found certain.

D. *Jenkinsii.* Labellum broader than long, repand, slightly two-lobed, shaggy, serrated.

D. *aggregatum.* Labellum broader than long, scarcely wavy, undivided, downy only near the base.

D. *densiflorum.* Labellum cordate, repand, two-lobed, reflexed at the point, serrated.

D. *Griffithianum.* Labellum ovate, slightly hastate, serrated, downy, except near the edges.

This species is more difficult to cultivate than those kinds with long free-growing stems. It is frequently seen in an unhealthy state, owing to its being grown in a pot, and subjected to a uniform high degree of temperature. The best way to insure its success, is, to tie it to a block of wood with a piece of turfy peat attached to it, and suspend it from the rafter of the house. There it must be well syringed at least twice a day, so long as it continues to grow, and afterwards it may be removed to a cooler house. In fact it never requires so much heat as those species with long trailing stems.

It is propagated in the usual way.

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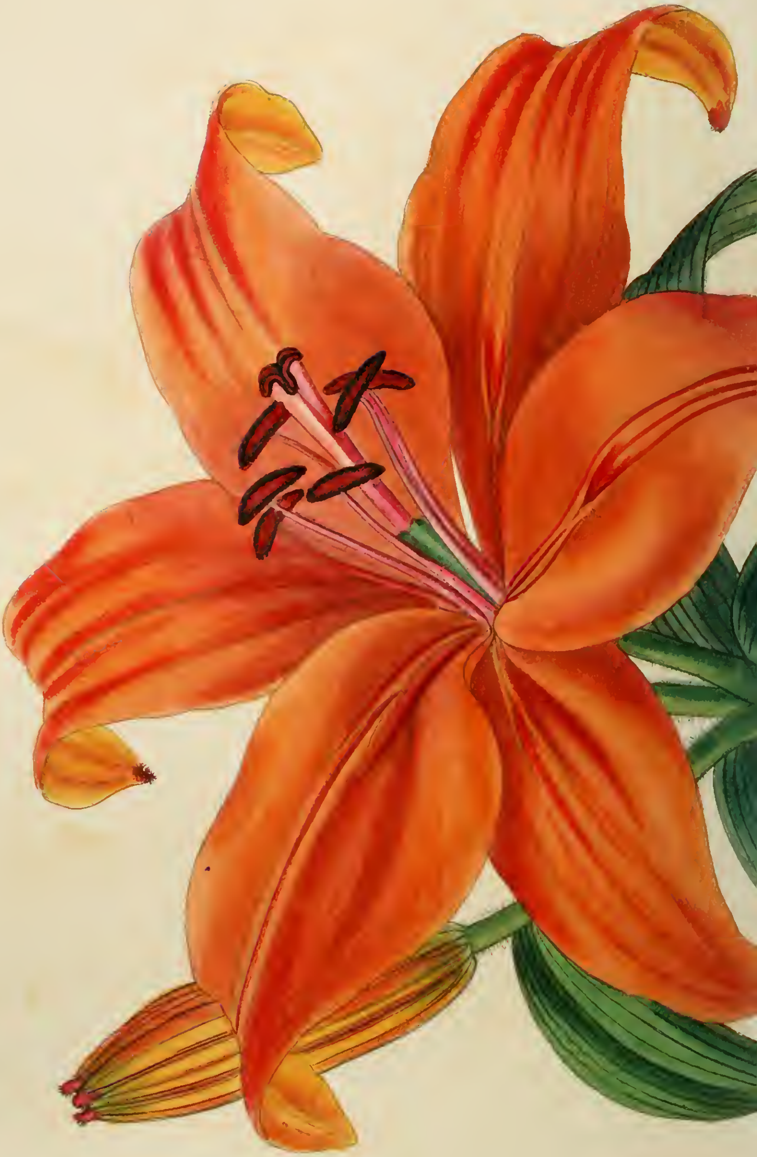
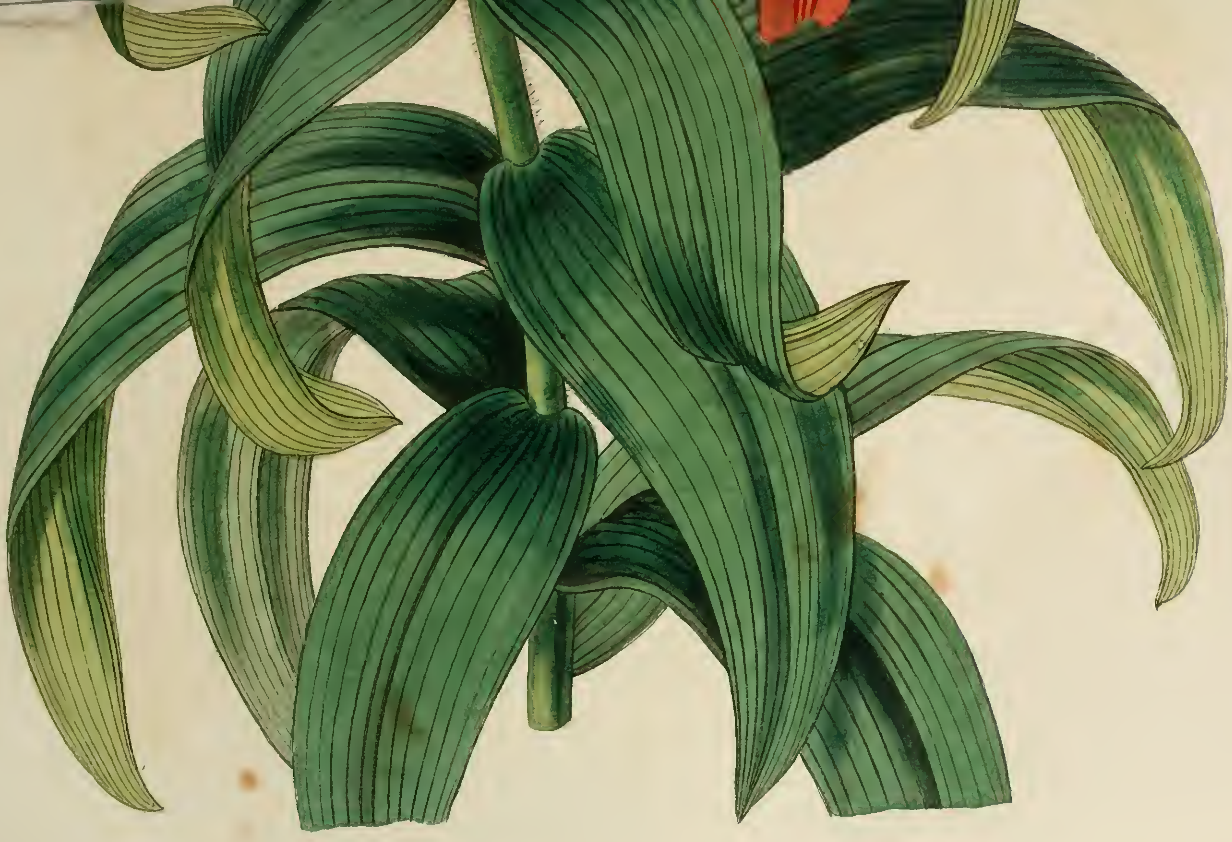




Miss Drake delt

Pub by J. Ridgway 169 Piccadilly Feby 1st 1839

J. Barnay sc.

LĪLĬŪM Thunbergiānūm.

Thunberg's Orange Lily.

HEXANDRIA *MONOGYNIA.*

Nat. ord. LILIACEÆ.
LILIUM. Botanical Register, vol. 2. fol. 132.

L. *Thunbergianum;* caule supernè villoso, foliis ovato-lanceolatis inferioribus alternis superioribus verticillatis, floribus terminalibus erectis, perianthii laciniis sessilibus patentibus apice revolutis intus glabris staminibus multo longioribus.
L. Thunbergianum. *Römer & Schultes syst. veg.* vi. 415.
L. bulbiferum. *Thunb. in act. soc. Linn. Lond.* II. 333.
L. philadelphicum. *Id. fl. jap.* 135.

This noble Lily was drawn in the nursery of Messrs. Rollissons, in June 1838, and is one of those introduced to Europe from Japan, by Dr. Siebold. It was originally found by Thunberg, who first referred it to L. philadelphicum, although its sepals and petals are sessile, and subsequently to L. bulbiferum, although it has no bulbs, and is also destitute of the papillæ which render the inside of the flower of that species scabrous. It is doubtless a distinct species.

In the volume of this work for 1837, fol. 2000, another fine species is figured; and in the same place will be found a short account of the other Lilies natives of the same country. Since that time I have received Siebold's beautiful Flora Japonica, in which L. speciosum and a variety are figured, with the following remarks, which the rarity of that work in England will justify my producing at second hand.

" Among more than 20 kinds of Lily brought by me from Japan to Europe, and deposited in the Botanic Garden at Ghent, are the varieties of L. speciosum now represented. To that with flowers rose-coloured, blotched with purple, I give the name of *L. speciosum Kæmpferi,* because it was the indefatigable botanist Kæmpfer who first made it known to Europeans. For the second, with pure white flowers, I preserve the Japanese name Tametomo, which it bears in its own country, in consequence of having been first brought by that hero from the Loo choo islands, as the Japanese assert. The beauty and fragrance of the flowers of these two kinds rank them among the most magnificent of their genus; I should even say that L. speciosum Kæmpferi stood at the head of them all, if a variety of Lilium longiflorum, which I have seen in Japan, with flowers often 8 or 10 inches long, did not dispute the palm, on account of its sweetness.

" *L. speciosum Kæmpferi* is cultivated all over Japan as an ornamental plant. Its true country is probably China, or rather Korai, if we may judge from its name *Korai-juri,* or Korai-lily. It flowers in May and June; in the Botanic Garden at Ghent, it did not flower in 1832 (the first time in Europe) till August. Like other kinds of Lily it is freely propagated by scales; it does not however bear bulbs in the axils of the leaves. It succeeds very well in a cold greenhouse, and even in the open air, if protected."

" The variety Tametomo, although it has pleased some Botanists to make a peculiar species of it, under the name of *L. eximium,* differs, nevertheless, only in its flowers being quite white, and the leaves rather more distinctly stalked. According to some of the Japanese botanists it is found wild, not only in the Loo choo islands, but also in the north of Japan; but it has, perhaps, been confounded with L. japonicum, which is often wild in those countries."—*Flora Japonica,* 1. 33.

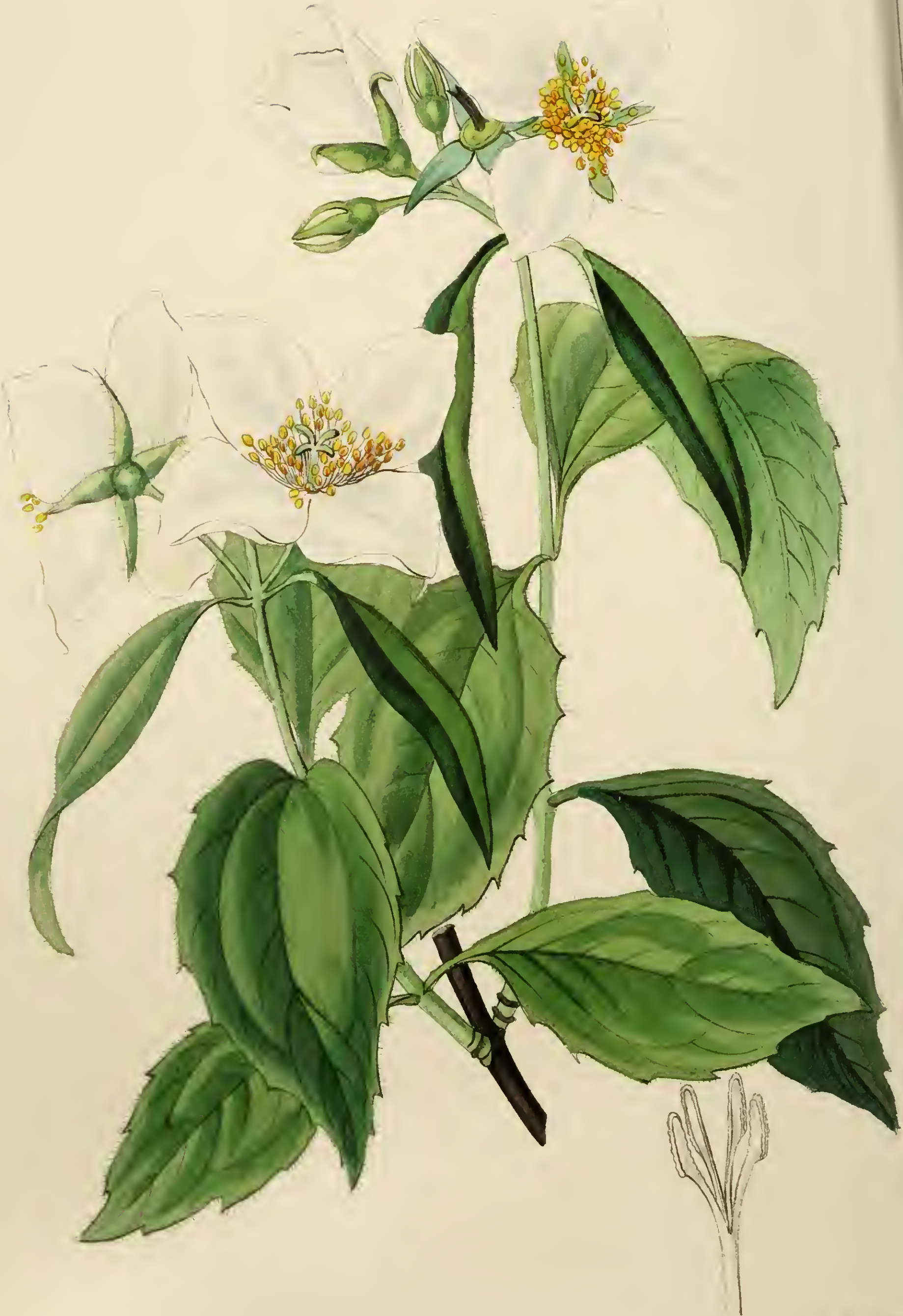
I presume the Lilies called by the Belgians *L. Lebroussardi* and *L. punctatum,* are both varieties of *L. speciosum.*

In cultivation this is a handsome frame or half-hardy bulb, growing about three feet high, and flowering from the beginning of July to the end of September, according to the manner in which it is treated. The bulbs should be fresh potted or planted in a pit, well protected from wet, late in the autumn, or very early in the spring, in a mixture of sandy-peat, loam, and a small portion of well-rotted dung or leaf mould.

The soil in the pots or pit in which the fresh bulbs are planted, should be kept dry until they begin to grow, when water should be given, but rather sparingly at first, as there is more damage done to fresh imported or fresh potted bulbs by over watering, or keeping them damp during winter, or while they are in a dormant state, than by all other causes taken together.

The plant may be increased freely from every scale which the old bulb is composed of. These if separated, potted in sand, and placed in a gentle heat, will soon make plants, but they will not flower for two or three years.

39



Drake del.

Pub. by J. Ridgway 169 Piccadilly Feby 1. 1839

G. Barclay

PHILADĒLPHŬS laxŭs.

Weak-branched Syringa.

ICOSANDRIA *MONOGYNIA.*

Nat. ord. PHILADELPHACEÆ.
PHILADELPHUS. *Botanical Register, vol. 7. fol.* 570.

P. *laxus ;* ramis debilibus pendulis atrofuscis, foliis ovatis acuminatis pilosiusculis acutè dentatis basi cuneatis supremis linearibus integerrimis, floribus subsolitariis, stylo 4-partito staminibus longiore, calycis laciniis fructu elongatis patentissimis.
P. laxus. *Schrad. in DC. prodr.* iii. 206. *Loudon Arboret. Brit.* 2. 954. *ic.*
? P. grandiflorus. *Elliott Fl. South Carolin.* 1. 538.

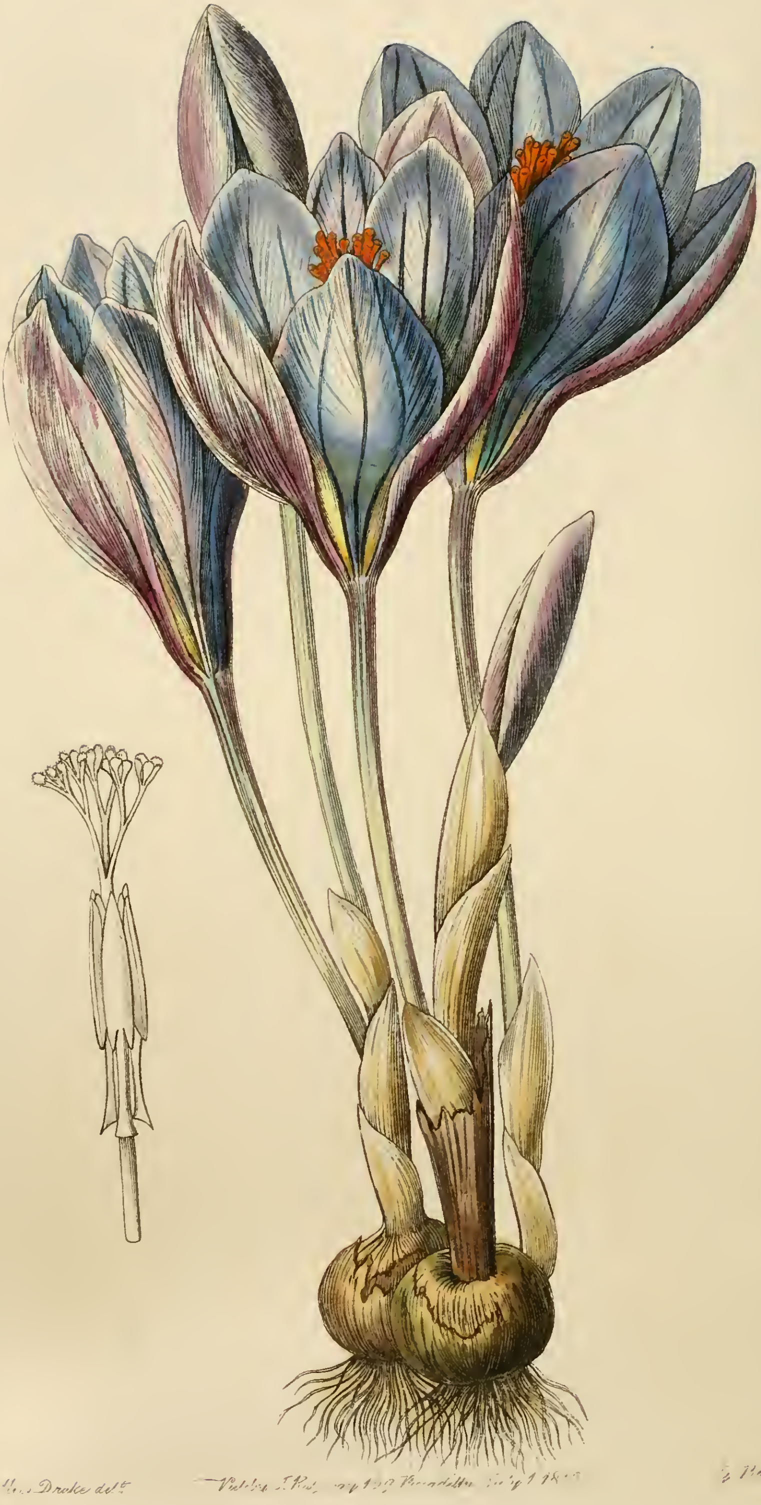
Whatever may be thought of some of the supposed species of Philadelphus now cultivated in gardens, there can be no doubt, I should think, of this being quite distinct from all others. It is occasionally received from North America, in a live state, and yet there is no certain trace of the plant in the writings of North American Botanists.

It is a hardy shrub, like all the rest of the genus, but less hardy than most others, wherefore it may be supposed to be a native of the Southern States of the American Union ; but upon turning to Elliott's Flora of Carolina, where some information concerning it may be expected, it turns out that only *P. inodorus* and *grandiflorus* are mentioned by that author. It is, however, possible that *P. laxus* is what is meant by the latter name ; and if so, the species " grows along the margins of rivers in the upper part of Georgia and Carolina ; common near Columbia."

The leaves are smaller than is usual in the genus, very sharp-pointed, with the toothings unusually sharp ; the uppermost leaves become gradually narrower, till those immediately below the flowers are, not unfrequently, linear and entire; their upper surface is bright green, with a few fine hairs, the under is much more closely covered. The flowers are white, most commonly solitary, and almost destitute of smell.

The species forms a straggling bush, not more than five feet high, but covering double that space upon the ground with its long slender deep-brown shoots. As it leafs early the young shoots are apt to be killed by frost, and if this takes place there will be no flowers, because it is from the ends of the lateral shoots that blossoms always appear in this genus.

40



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CRŎCŬS speciōsŭs.

Showy Autumn Crocus.

TRIANDRIA *MONOGYNIA.*

Nat. ord. IRIDACEÆ.
CROCUS. Botanical Register, vol. 17. *fol.* 1416.

C. *speciosus;* foliis hysteranthiis, vaginâ radicali subbiflorâ, perianthii ventricosi obovati laciniis omnibus penicillatis, stylo erecto antheris longiore, stigmatibus linearibus multifidis, cormi tunicis lentis lævibus.
C. speciosus. *Eng. Bot. Suppl. t.* 2752. *Host. Fl. austr.* 1. 43. *Baumgart. enum. Transylv.* 1. 60.

This beautiful autumn Crocus is one of those neglected flowers which ought to abound in every select garden. It blossoms in October, is quite hardy, and can scarcely be said to require cultivation. It was communicated for this work from the nursery of Messrs. Osborn and Co. of Fulham, who have it for sale.

According to Mr. Wilson it is naturalized in a meadow near Warrington, where it flowers in September; and in the opinion of this Botanist it is only distinguishable from C. nudiflorus by its long style.

In English Botany it is referred to the C. speciosus of Bieberstein, upon the authority of Sir Wm. Hooker. If this is correctly done, the species will inhabit the woods of the Crimea, under trees, and the grassy hills of the Eastern Caucasus; and I do not perceive any thing in the short account given by Bieberstein at variance with this plant. But as I find the opinion of Mr. Herbert, who has studied the genus with care, opposed to this conclusion, I forbear to quote any synonyms beyond those concerning which there is no doubt.

It is certainly a native of most of the forests and orchards of Transylvania, whence I have a wild specimen, named C. nudiflorus, collected by Dr. Baumgarten himself; according to Host it was found by the late Dr. Sadler on the outskirts of woods in various parts of Hungary.

Mr. Strangways saw it cultivated at Naples, under the name of Crocus speciosus.

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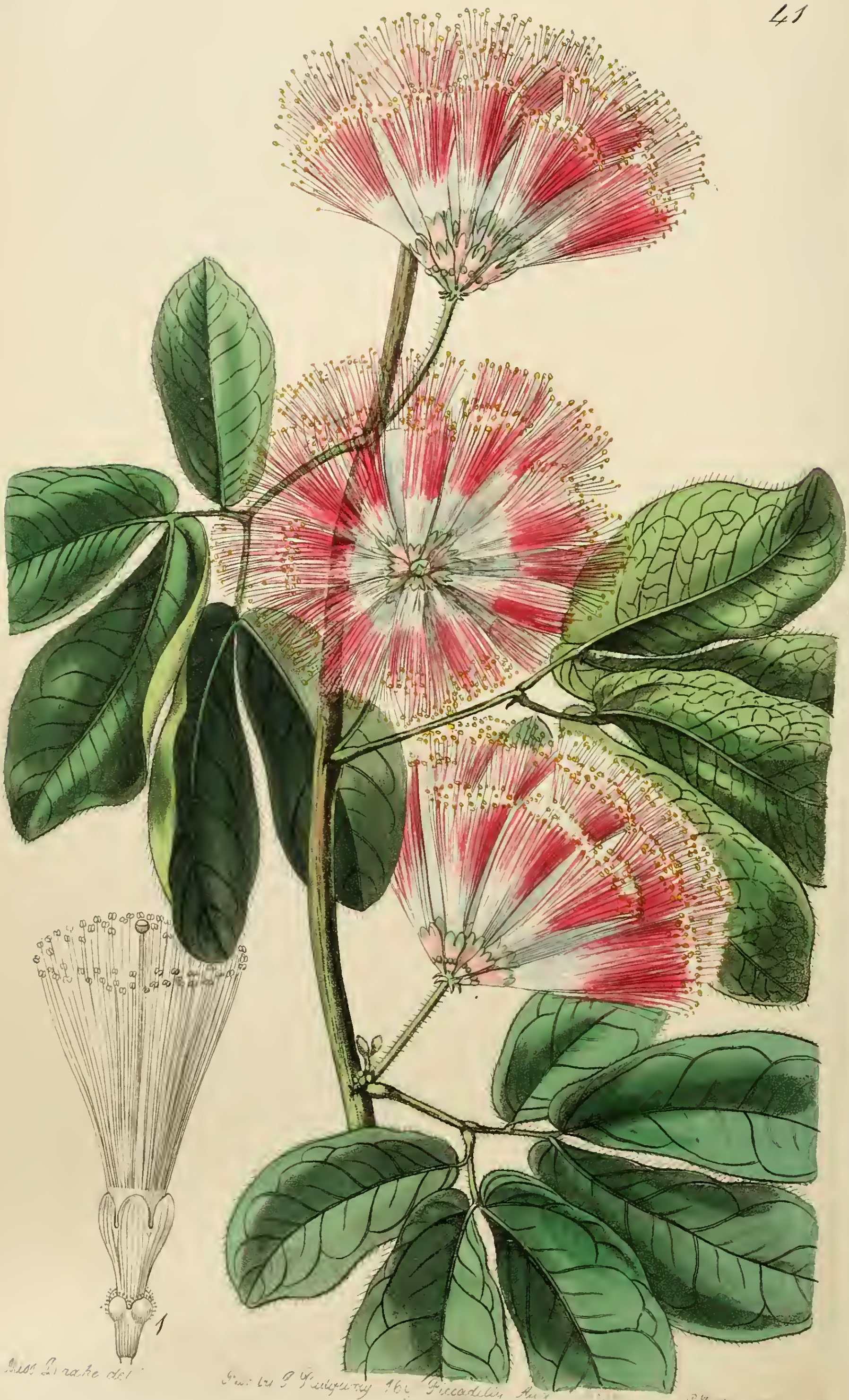

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* ĪNGĂ Harrĭsĭī.

Mr. Harris's Inga.

POLYGAMIA *POYANDRIA.*

Nat. ord. LEGUMINOSÆ, § MIMOSEÆ.
INGA. Botanical Register, vol. 2. fol. 129.

I. *Harrisii ;* (Hymenæodea) scandens, inermis, foliis conjugato-pinnatis pilosis, pinnis bijugis, foliolo interiore jugi inferioris deficiente cæteris obovato-oblongis obliquis subcordatis, pedunculis solitariis petiolorum longitudine, floribus capitatis.

Frutex *scandens, viridis, pilosus.* Petioli *semipollicares, pedunculis paulò breviores.* Foliola *subæqualia, fere 2-pollicaria.* Capitula *subvigintiflora.* Calyx *obconicus, albus, laciniis viridibus, rotundatis, convexis, glandulosis.* Corolla *monopetala, turbinata, rosea, viridi limbata, laciniis rotundatis glabris.* Stamina *ultra corollam monadelpha ; filamentis pollicem longis basi albis ultra medium purpureis.*

A pretty climbing shrub, imported from Mexico by Thomas Harris, Esq. of Kingsbury, a most zealous collector of rare plants, in compliment to whom it is named.

It seems distinct from all the published species of this large genus ; approaching Inga canescens in character, but with much larger leaves, shorter peduncles, and smaller flowers. The crimson silken tassels of stamens are very graceful and pretty.

The drawing was made in Mr. Harris's collection in February last.

Like many Mexican plants, this species grows best in a house where the temperature is a little higher than in a common greenhouse. It delights in a rich fresh soil, which may be formed with a mixture of good loam and peat, and about one-fourth of pure sand.

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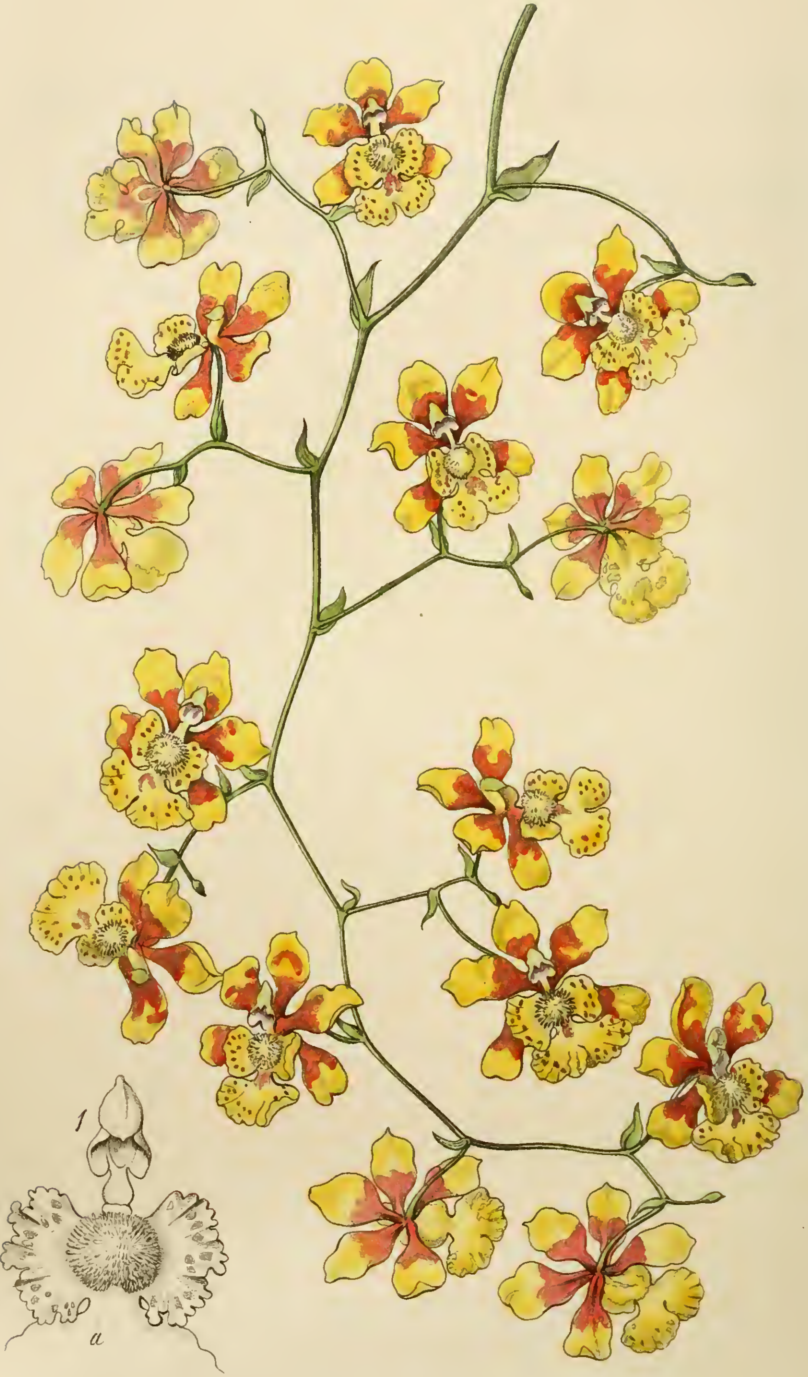
* This name first appears in the work of Marcgraaf upon Brazilian plants, and appears to be the vernacular appellation of certain species of the genus to which it is now applied.

August, 1839.

The best time to strike cuttings is when it begins to grow vigorously. All that is requisite is to insert them in silver-sand, and to cover them with a bell-glass.



Drake delt   Pub by J Ridgway 169 Piccadilly Aug^t 1.1839.   G. Barclay sc

ONCIDIUM pulvinatum.

The Cushion Oncidium.

GYNANDRIA *MONANDRIA.*

Nat. ord. Orchidaceæ, § Vandeæ.
ONCIDIUM. Swartz.

O. *pulvinatum;* paniculâ ramosissimâ divaricatâ, sepalis obovatis lateralibus liberis, petalis conformibus acutis, labelli lobis subæqualibus intermedio bilobo undulato lateralibus crenatis rotundatis crispis, disco pulvinato villosissimo, columnæ alis rotundatis. *Bot. Reg.* 1838. *misc. no.* 115.

Panicula *ramosissima, intricata, glabra,* 8-9-*pedes longa; axi percurrente rectiusculo pennæ corvinæ crassitudine, ramis simplicibus ramosisque divaricatis geniculatim flexuosis, internodiis pollicaribus bracteis refractis membranaceis acutis pluries longioribus.* Flores *O. divaricati simillimi, lutei in medio sanguineo guttati.*

One of the largest of the Oncidia, vieing with *O. altissimum* in stature, its panicle being 8 or 9 feet long, of which one of the smaller branches only is represented in the accompanying plate, and resembling *O. divaricatum* in the structure, colour, and size of its flower. It however differs from that species in its lip having the middle lobe largest, not smallest; and in the cushion at its base being much more villous and equally convex, not divided into equal quarters. The lateral lobes of the lip are also crisp in this species, not plain, as in O. divaricatum.

In the specimen before me there is one central axis, in the middle, about as thick as a crow's quill, gently wavy, and so weak as to be unable to support its flowers without the assistance of neighbouring objects. At regular distances from this proceed the branches, which are either simple or themselves branched, and zigzag in a remarkable manner; the whole forming an entangled mass of inflorescence.

It is a native of Rio Janeiro, whence it was sent to Mr.

Richard Harrison, of Aighburgh, in the year 1834, by his brother, Mr. William Harrison.

The treatment frequently recommended for orchidaceous plants of this kind, will be found to suit the present. Like the greater number of species in the extensive genus to which it belongs, it succeeds best if hung up in a basket, or tied to a block of wood, and suspended from the rafters of the stove. The only things to be noticed in this system of cultivation, is, first to tie some good turfy peat to the block along with the plant; and secondly, to syringe freely, as the plants are apt to get too dry.

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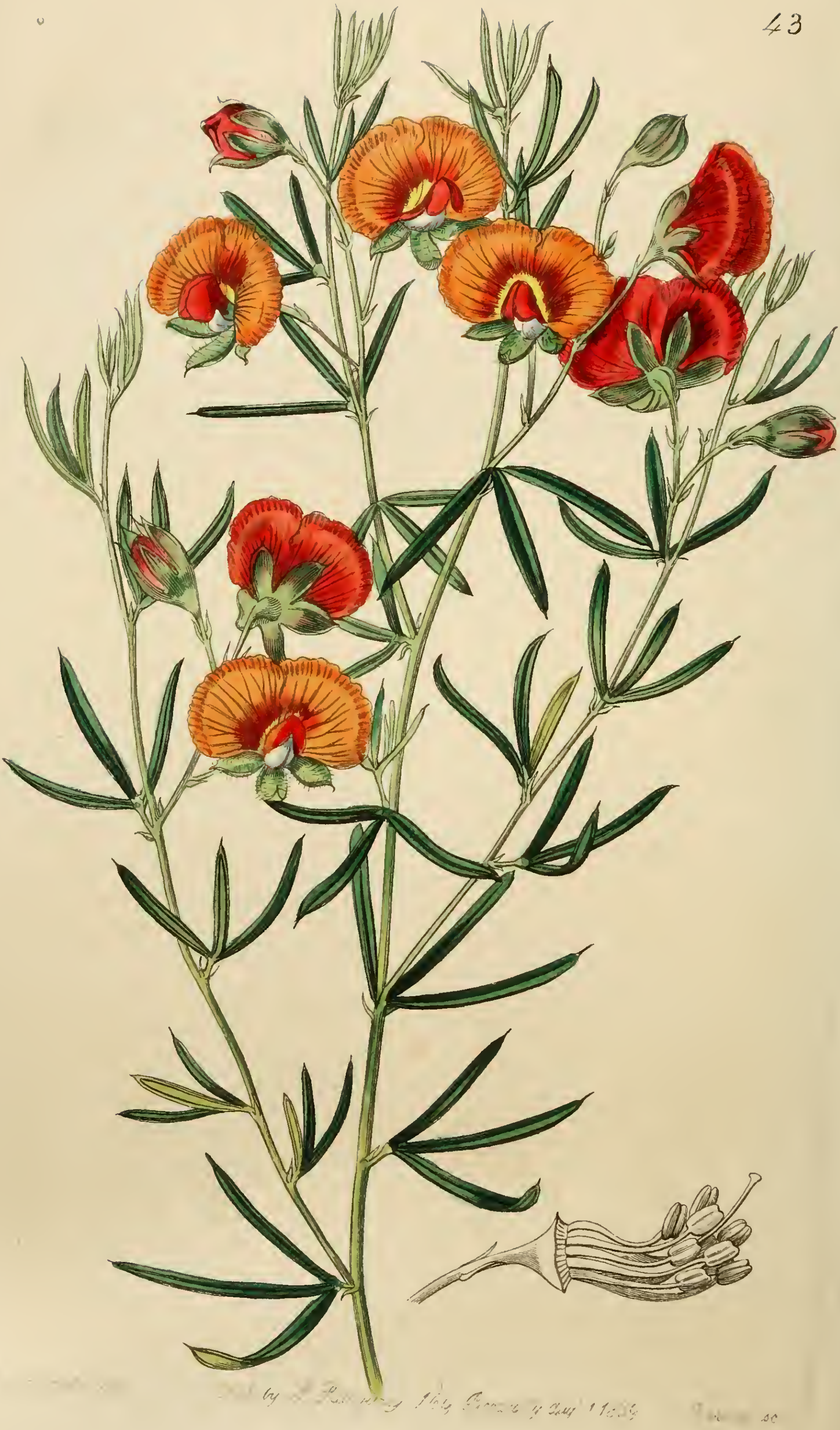

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GOMPHOLŎBĬŪM versĭcŏlŏr.

Changeable Gompholobium.

DECANDRIA *MONOGYNIA.*

Nat. Ord. Leguminosæ; Papilionaceæ.
GOMPHOLOBIUM. *Supra vol.* 6. *fol.* 484.

G. *versicolor;* caule erecto, foliis breviter petiolatis trifoliolatis: foliolis linearibus mucronatis glabris margine revolutis, racemo laxo paucifloro, calycis laciniis oblongo-linearibus cuspidatis extùs glabris intùs pubescentibus, carinâ glabrâ. *Supra miscell. no.* 62.

Suffrutex *debilis, glaber, ramis subangulatis flexuosis.* Folia *trifoliolata, petiolo stipulis setaceis æquali vel breviore; foliolis linearibus, mucronatis, margine revolutis, omninò aveniis et uniformibus.* Racemi *terminales,* 2-3-*flori, pedunculis capillaribus flexuosis subangulatis clavatis;* bracteolæ *setaceæ, distantes.* Calyx *extus glaber, intùs lineâ tomentosâ intramarginali circumdatus;* laciniis *oblongis mucronatis subæqualibus.* Flores *fusco-sanguinei, ætate pallescentes;* vexillo *reniformi, undulato, alis duplò longiore, valdè transverso, bilobo: lobis imbricatis.* Stamina *æqualia, glabra.*

This little Swan-river, and therefore Greenhouse, shrub, with pretty brownish crimson flowers, becoming paler after a short expansion, was introduced by Robert Mangles, Esq. of Sunning Hill, to whom I am obliged for the accompanying figure.

There are three species of Gompholobium, with this habit, very much like each other, and difficult to distinguish, if indeed they are distinct. One of them is the G. *tenue* of this work, fol. 1615, with yellow flowers; it has in a wild state the petioles longer than the stipules, and the peduncles seem to be usually one-flowered. The second is G. *sparsum* of Mr. Allan Cunningham, found by that zealous botanist at King George's Sound; it has the dark flowers of G. *versicolor,* and its short petioles; but its branches are more angular, the leaves are distinctly veiny on the upper side, and those near the bottom of the branches are much shorter and broader than the others. The third is the G. *versicolor,* which differs from G. *tenue* in its short petioles, and subracemose dark flowers; and from G. *sparsum* in the leaflets not being at all veiny, and all equal sized.

This species strikes readily from cuttings, either in autumn or in spring, if they are put into a pot of sand and covered with a bell-glass. The soil most congenial to its growth is peat and sand, with about one-fourth of good loam. When the plant is young its top should be taken off, it will then send out several lateral shoots, and by topping some of these, it will soon form a handsome bush. It is as easily cultivated as the more common G. *polymorphum.* Of course it requires the protection of the greenhouse.

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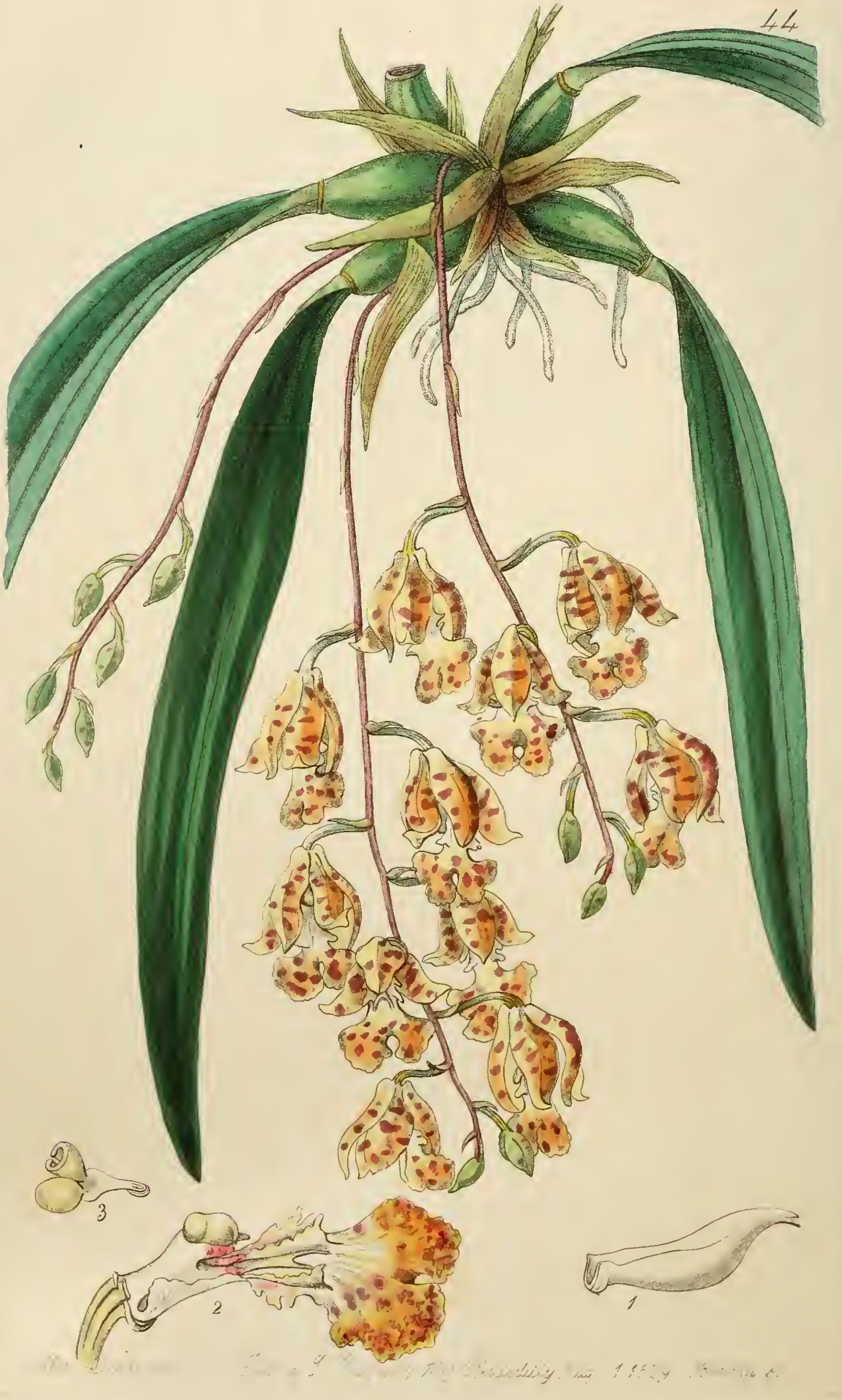

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BURLINGTŌNĬĂ maculāta.

Spotted Burlingtonia.

GYNANDRIA *MONANDRIA.*

Nat. ord. Orchidaceæ, § Vandeæ.
BURLINGTONIA. Botanical Register, vol. 23. *fol.* 1927.

B. *maculata ;* racemis pendulis, sepalo anteriore emarginato : supremo sepalisque ovato-oblongis undulatis acutis, lamellis labelli cristatis dentatis, labello bilobo undulato denticulato versus unguem lacero, foliis lineari-lanceolatis.

Pseudobulbi *ovales compressi monophylli basi aphylli ; foliis lineari-lanceolatis striatis rectis.* Pedunculi *penduli, racemosi, foliorum longitudine; bracteis ovario dimidio brevioribus.* Flores *odorati, lutei, cinnamomeo colore maculati, in genere parvi ;* labellum *cæteris longius, basi album, lamellis* 3 *inæqualiter dentatis carnosis parallelis anticè abruptè truncatis.* Columna *ungue labelli brevior eique appressa, clavata, semiteres, apice utrinque bicornis sanguinea.*

A sweet-scented epiphyte, obtained from Brazil by Messrs. Loddiges, with whom it flowered in May, 1838. It is very distinct from all the species of this genus previously known, and is, I hope, an omen of there being many more yet to discover. It confirms the generic character originally given, and removes all doubt about the distinctness of Burlingtonia from Rodriguezia.

In cultivating this plant, it should be tied to a block of wood and suspended from the rafters of the orchidaceous house. If a little piece of turfy peat is tied to the block along with it, it is of considerable service in keeping the roots moist. In the growing season it will require to be syringed freely two or three times every day, and shaded from bright sunshine. When it is not growing, water must be given very sparingly.

If this treatment is practised it will flower freely.

Fig. 1. is a view of the two connate anterior sepals; 2. is the column and lip, shewing the lamellæ and lacerated margin of the latter, together with the crimson teeth at the apex of the column; 3. are the caudicula, gland, and pollen masses; one of the latter being divided across to shew that it is really a plate rolled up.

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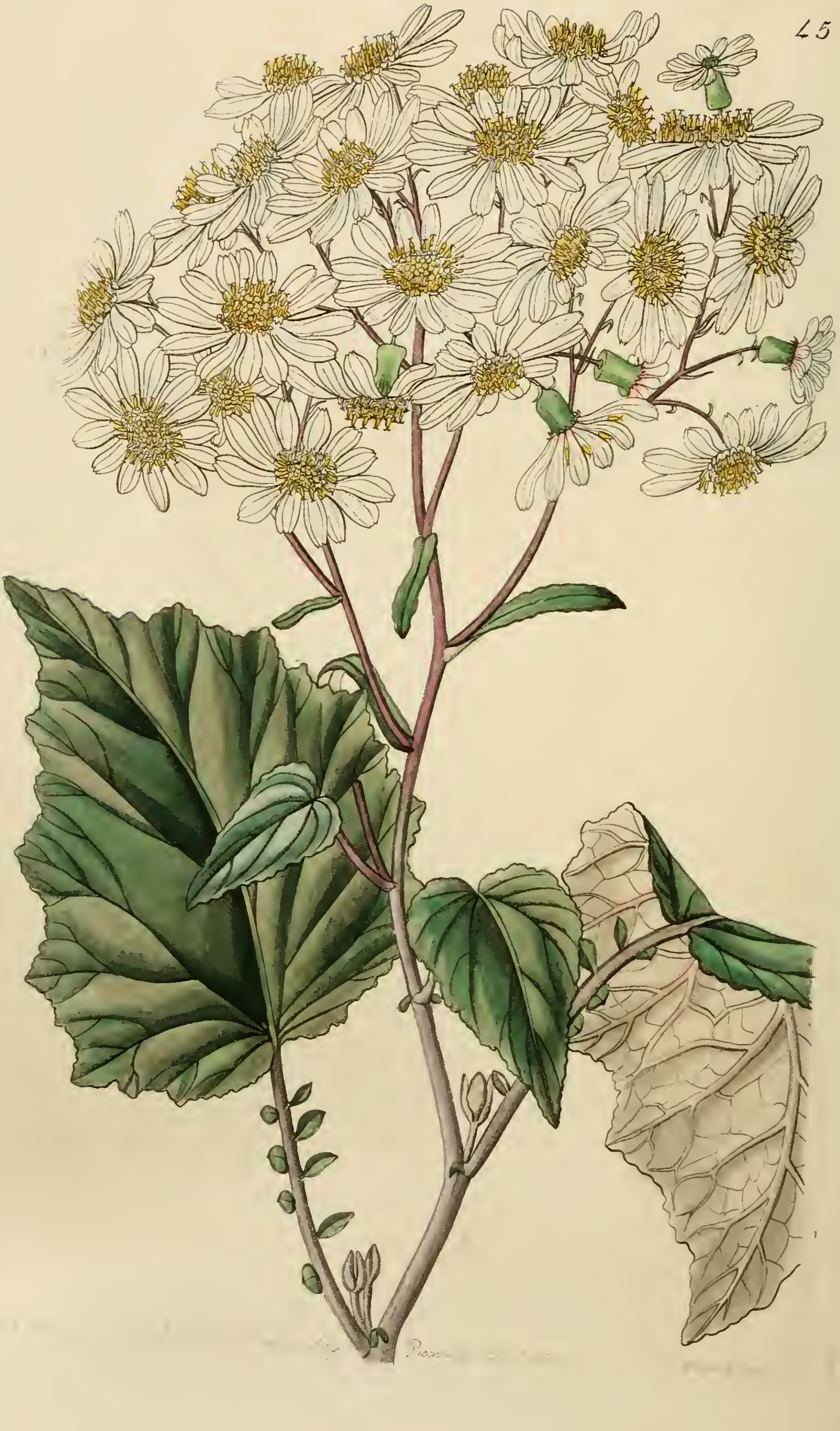

SENECIO populifolius; *var.* lacteus.

Milk-white Poplar-leaved Senecio.

SYNGENESIA *POLYGAMIA SUPERFLUA.*

Nat. ord. Asteraceæ, *or* Compositæ.
SENECIO. Linn.

S. *populifolius;* fruticosus foliis petiolatis cordatis ovatis acutis denticulatis suprà adultis glaberrimis subtùs ramisque cano-tomentosis, capitulis corymbosis glabris, pedicellis tenuissimè bracteolatis, involucri squamis 12-15, ligulis circiter 10. *DeCand. prodr.* vi. 409.
Cacalia appendiculata. *Linn. f. suppl.* 352. *Willd. sp. pl.* 3. 1729.
Cineraria populifolia. *L'Herit. sert. angl.* 26.
Cineraria appendiculata. *Poir. suppl.* 2. 263.
Var. C. lactea. *Willd. enum. suppl.* 59.

A little known greenhouse shrub, which, now that the growth of the Cineraria-like Senecios has become so successful, deserves to be brought to notice, either for cultivation in its original purity, or for the purpose of producing hybrid intermixtures. No coloured figure of it has previously appeared, but it appears from DeCandolle's Prodromus that it is to form the subject of one of the outline engravings illustrative of Webb and Berthellot's "Flore des Isle Canariennes."

It is a native of the Canaries, in woods on the isle of Palma, whence it was sent by Mr. Philip Barker Webb to his Gardener at Milford, near Godalming; and the drawing now published was made so long since as June, in the year 1832, from a plant communicated to me by Mr. Young, now nurseryman of that place.

DeCandolle considers it a variety of the yellow C. populifolia.

The species is best treated as a half-hardy perennial; it grows freely in any rich soil, and flowers during a great part of the year, particularly in the spring. It may be increased from cuttings of the young shoots, or by dividing the old plants in the autumn, and it requires about the same treatment as the herbaceous kinds of Calceolaria. Strong specimens are as much as four feet high.

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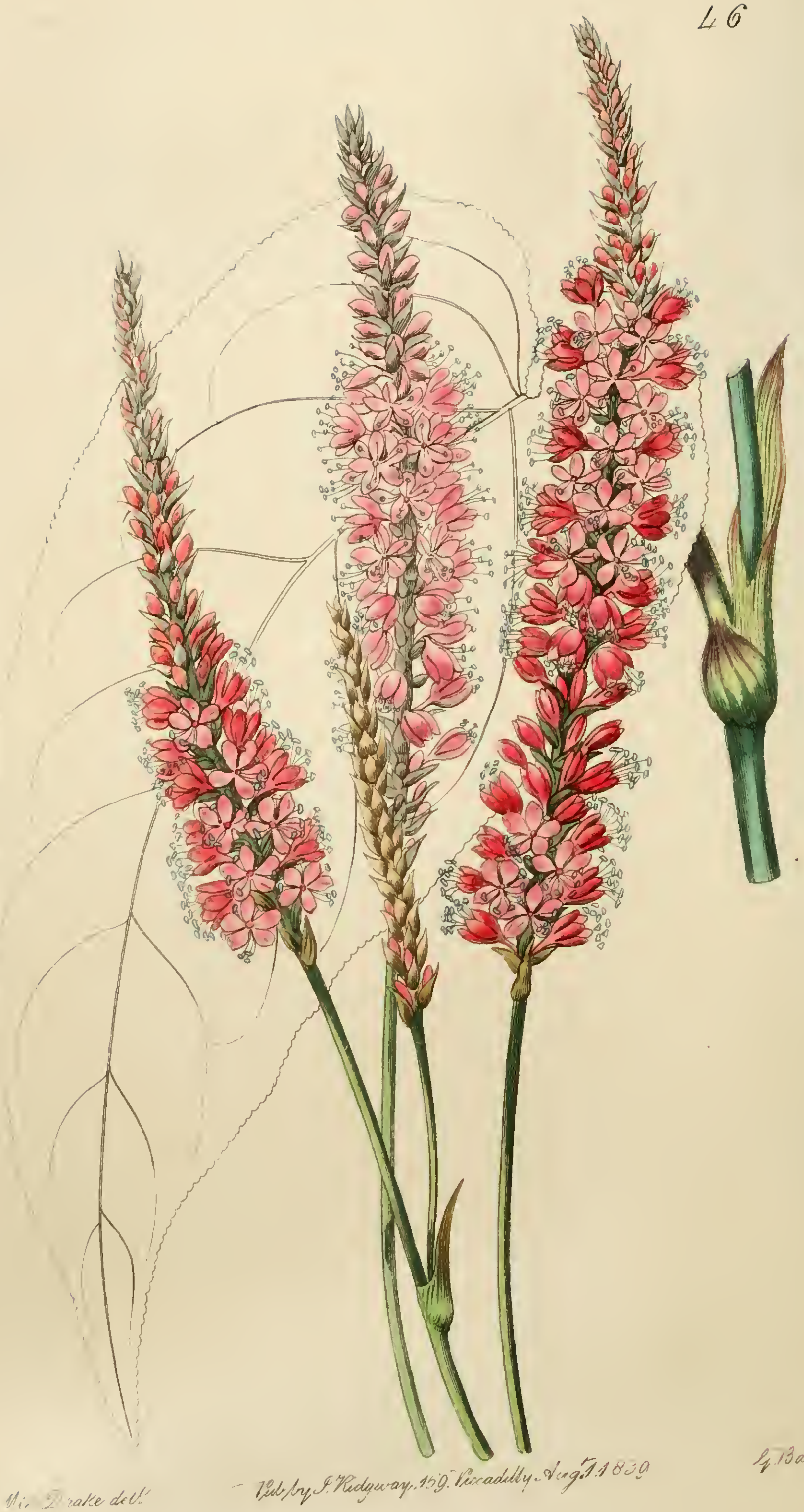

Miss Drake delt. Pub. by J. Ridgway, 159 Piccadilly Aug. 1. 1839 G. Barclay s

POLY̆GŎNŪM amplexicaūlĕ.

Stem-clasping Polygonum.

OCTANDRIA *TRYGYNIA.*

Nat. ord. POLYGONACEÆ.
POLYGONUM. Linn.

P. *amplexicaule* (Bistorta); caule erecto, foliis radicalibus longè petiolatis cordatis ovatis acuminatis crenulatis integrisque costâ subtùs tomentosâ; supremis amplexicaulibus, spicis elongatis acuminatis multifloris, bracteis ovatis acuminatis imbricatis margine scariosis, calyce petaloideo laciniis ovalibus obtusis, staminibus 8 exsertis.
P. amplexicaule. *Don prodr. fl. nep.* 70. *Meisner monogr. Polyg.* 51. *in Wall. pl. as. rar.* iii. 54. *Babington in Linn. trans.* xviii. 96. *Bot. Reg.* 1838. *misc. no.* 117.
P. speciosum. *Meisn. l. c.* 53. *Wall. cat. no.* 1716.!
P. ambiguum. *Id.*
P. oxyphyllum. *Id. Wall. cat. no.* 1715.!
P. petiolatum. *Don. l. c.*

This seems to be a common Nepalese plant, varying in appearance like all species very extensively dispersed, and consequently divided into several spurious species upon the supposed evidence of dried specimens. Mr. Babington has rightly reduced to their true value the *P. oxyphyllum* and *ambiguum* of Meisner, and I add without hesitation the *P. speciosum* of the same author, which does not merit distinction even as a variety.

The seeds from which this was raised were received by the Horticultural Society from Dr. Falconer, the superintendent of the Botanical Garden of Saharunpur, as has already been briefly stated in this work, (volume for 1838, no. 117 of the miscellaneous matter). No varieties were seen among the seedlings, and it is probable that the differences which have been remarked among the dried specimens were produced by local causes.

The species is very pretty and graceful, from the abundance of crimson spikes which it produces ; but it is inferior in beauty to the *P. vacciniifolium* from the Himalayan mountains, which is a trailing shrub, and would be an acquisition to our gardens.

P. amplexicaule itself is a hardy perennial, growing three or four feet high, and flowering in July and August. It should be treated as an amphibious plant, so that its roots may be within reach of the water ; it is therefore well adapted for planting on the margins of lakes or ponds.

It may be increased freely by dividing the old plant when in a dormant state, or from seeds sown in the spring ; but the seedlings, like most true perennial plants, will not flower before the second season.

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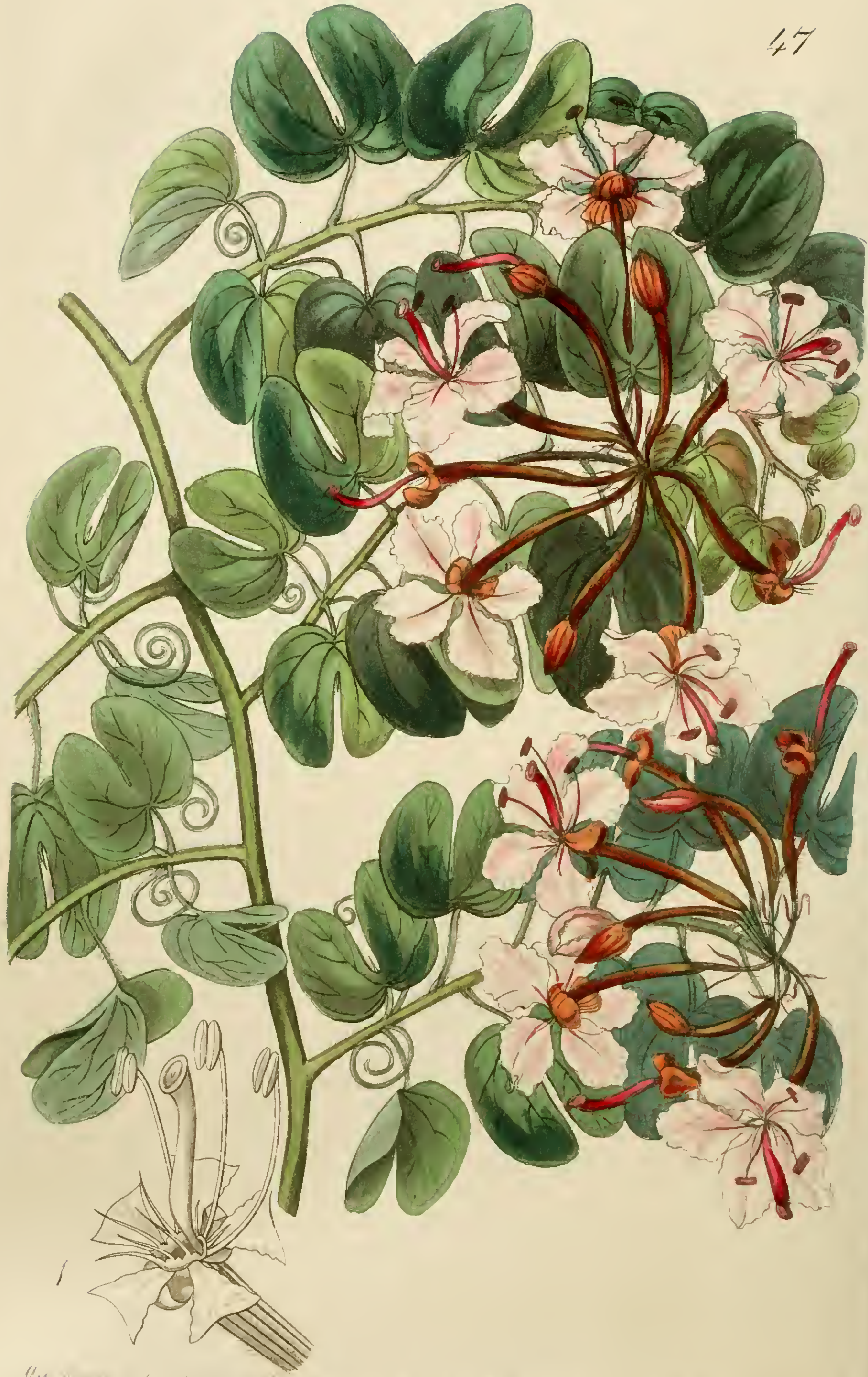

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* BAUHĪNĬĂ corymbōsă.

Corymb-flowering Bauhinia.

TRIANDRIA *MONOGYNIA*, or DECANDRIA *MONOGYNIA*, or PENTANDRIA *MONOGYNIA*, or MONANDRIA *MONOGYNIA*; or MONADELPHIA *MONANDRIA*, *TRIANDRIA*, *PENTANDRIA*, or *DECANDRIA*.

Nat. ord. FABACEÆ, or LEGUMINOSÆ, § CASSIEÆ.
BAUHINIA, *Linn. Botanical Register*, *vol.* 14. *t.* 1133.

§ III. SYMPHYOPODA, *DC.*

B. *corymbosa*; ramis teretibus cirrhiferis, foliis cordatis subtùs in nervis petiolis ramulis calycibus rufo-pubescentibus, foliolis semiovalibus infra medium concretis 3-nerviis, staminibus 3 petala ovata undulata unguiculata subæquantibus.

B. corymbosa. *Roxb. fl. ind.* 2. 329. *DeCand. prodr.* 2. 515.

A Chinese shrub, long since brought into this country, but resisting all attempts to flower it until September, 1838, when its beautiful clusters were produced abundantly in the greenhouse at Redleaf. Mr. Wells, in the note that accompanied the specimens, tells me that he has had it ten or twelve years. In Chinese drawings, especially those belonging to the Horticultural Society, this is represented loaded with flowers, and in such a condition it must be one of the handsomest objects in nature. As it has at length begun to fructify, its period of adolescence may be considered to have arrived, and therefore cuttings from Mr. Wells's plant will probably continue to yield blossoms regularly, and in more and more abundance every year.

I have compared the plant with authentic specimens from the Botanic Garden, Calcutta, and have thus assured myself of the identity of this and the plant of Dr. Roxburgh. I have, however, been obliged to correct the specific character given by M. DeCandolle, which is in some measure at variance with the plant.

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* So named by Linnæus after the two great Botanists John and Caspar Bauhin of Basle, who are typified by the twin leaves peculiar to this genus.

Dr. Roxburgh calls this "a very extensive delicate species;" it has scarcely any thing, he says, that deserves the name of stem, but its "many slender branchlets and branches climb and spread in every direction to an extent of many fathoms, running over high trees, &c."

It will succeed best in a house where the temperature is something below that of a common damp stove. The soil should be fresh and rich, composed of a mixture of peat, loam, and decayed manure. The best way to grow it is to give its roots plenty of room, by planting it out in a border; where this cannot be done, it should have as much pot-room as possible.

It may be propagated either by layers or cuttings.

The lover of the Linnean classification of plants and admirer of its precision, will I am sure be delighted to see how well this genus Bauhinia accords with its divisions. Upon referring to the station assigned to it above, it will be seen that *it suits equally well no fewer than eight of the Linnean classes or orders.*

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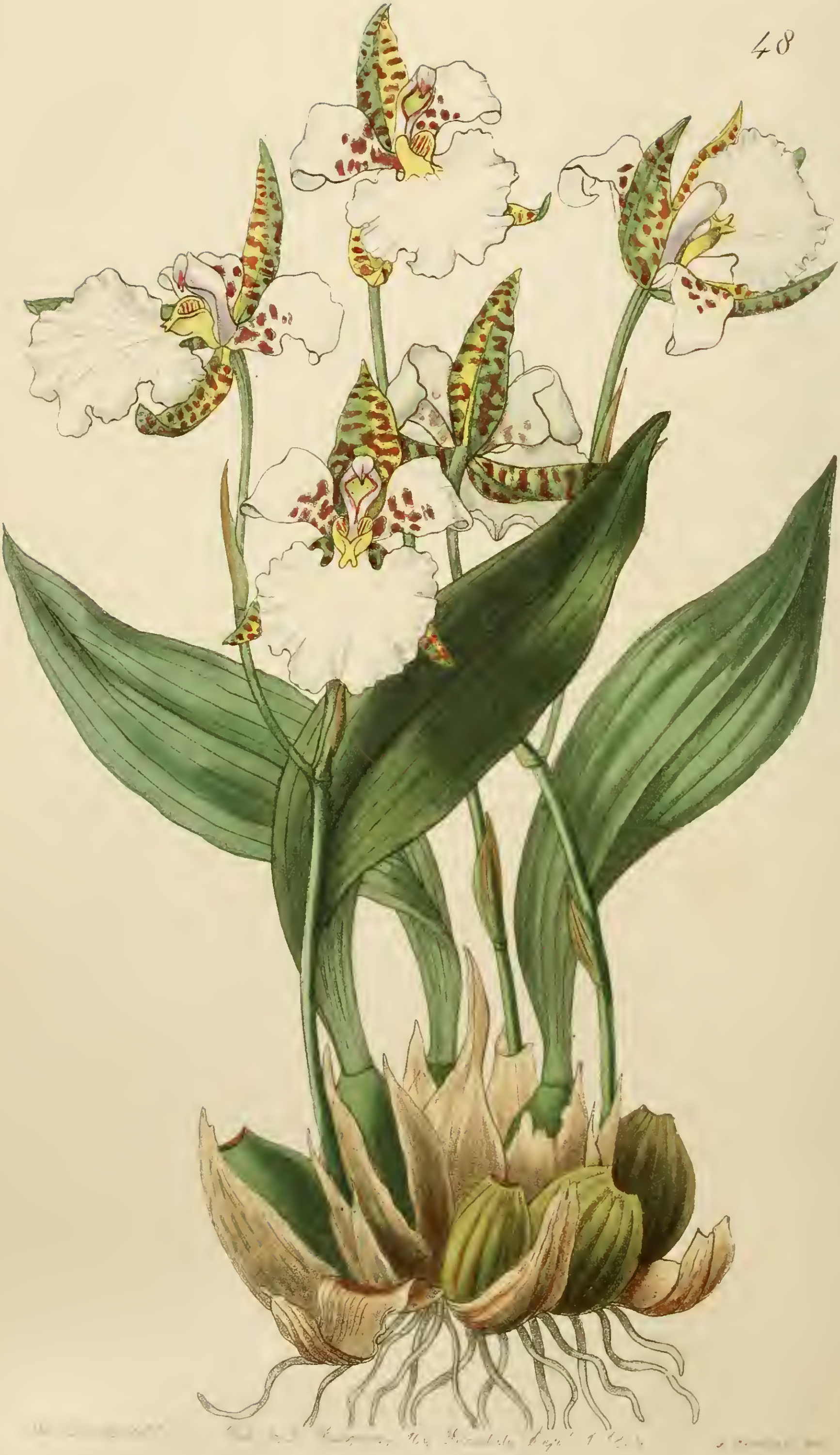

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* ODONTOGLŌSSŪM Rossĭĭ

Ross's Odontoglossum.

GYNANDRIA *MONANDRIA.*

Nat. ord. ORCHIDACEÆ, § VANDEÆ.

ODONTOGLOSSUM, Kunth. Sepala lateralia patula libera, *Labellum* planum, unguiculatum, ascendens, limbo reflexo diviso dentato apice angustato; basi concavum cristâ bilamellatâ raro fimbriatâ sæpiùs anticè bidentatâ auctum. *Columna* elongata, apice auriculata aut aptera. *Sertum Orchidaceum, t.* 25.

Odontoglossum *Rossii;* pseudobulbis ovatis cæspitosis ancipitibus monophyllis, foliis oblongo-lanceolatis scapo radicali subbifloro longioribus, bracteis membranaceis carinatis acuminatis, sepalis lineari-lanceolatis carinatis acuminatis patentibus, petalis oblongis obtusis revolutis, labello subrotundo-ovato emarginato undulato lamellis unguis confluentibus rotundatis denticulis 2 anterioribus obtusis, columnâ apterâ pubescente. *Sertum Orchid. t.* 25.

Pseudobulbi *compressi, vaginis marcescentibus breviores.* Folia *erecta, bipollicaria, lanceolata, striata, vix coriacea, scapo longiora.* Scapus *erectus, radicalis, medio nudus aut squamâ solitariâ auctus, subbiflorus; pedunculis medio vaginatis.* Flores 2 *uncias lati, erecti; sepalis patentissimis, lanceolatis, luteo-viridibus fusco maculatis; petalis albis basi purpureo guttatis; labello candido, purissimo, sub lente minutissimè pubescente, ungue* 3 *lineas longo columnâ apterâ velutinâ paulò breviore.* Lamellæ labelli *carnosæ, anticè connatæ, fronte bidentatæ, luteæ, intus sanguineo striatæ.* Stigma *purpureo-marginatum.*

A charming plant, sent to Mr. Barker from Mexico by his collector Mr. Ross, after whom it is named. The bright white lip, lying as it were in the centre of a rich green yellow and blue star of three points, produces a peculiarly beautiful and unusual appearance.

Many of the species of this genus are however handsomer, and few less beautiful, than this; let us therefore hope that Mr. Hartweg will succeed in procuring them for the

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* From *οδους* a tooth, and *γλωσσα* a tongue, in allusion to the toothings of the labellum at the base.

Horticultural Society, now that he is engaged in exploring the rich neighbourhood of Oaxaca, the head-quarters of Mexican Orchidaceæ. Odontoglossum nebulosum has flowers nine inches in circumference, those of O. Cervantesii are much like O. Rossii, but larger and richer coloured, and both these are from the south-west of Mexico.

It requires to be cultivated in a warm damp stove, where it may either be potted in the usual way, or, which is preferable, suspended from the roof upon a block of wood.

Like other Orchidaceæ it may be multiplied by dividing its pseudo-bulbs.

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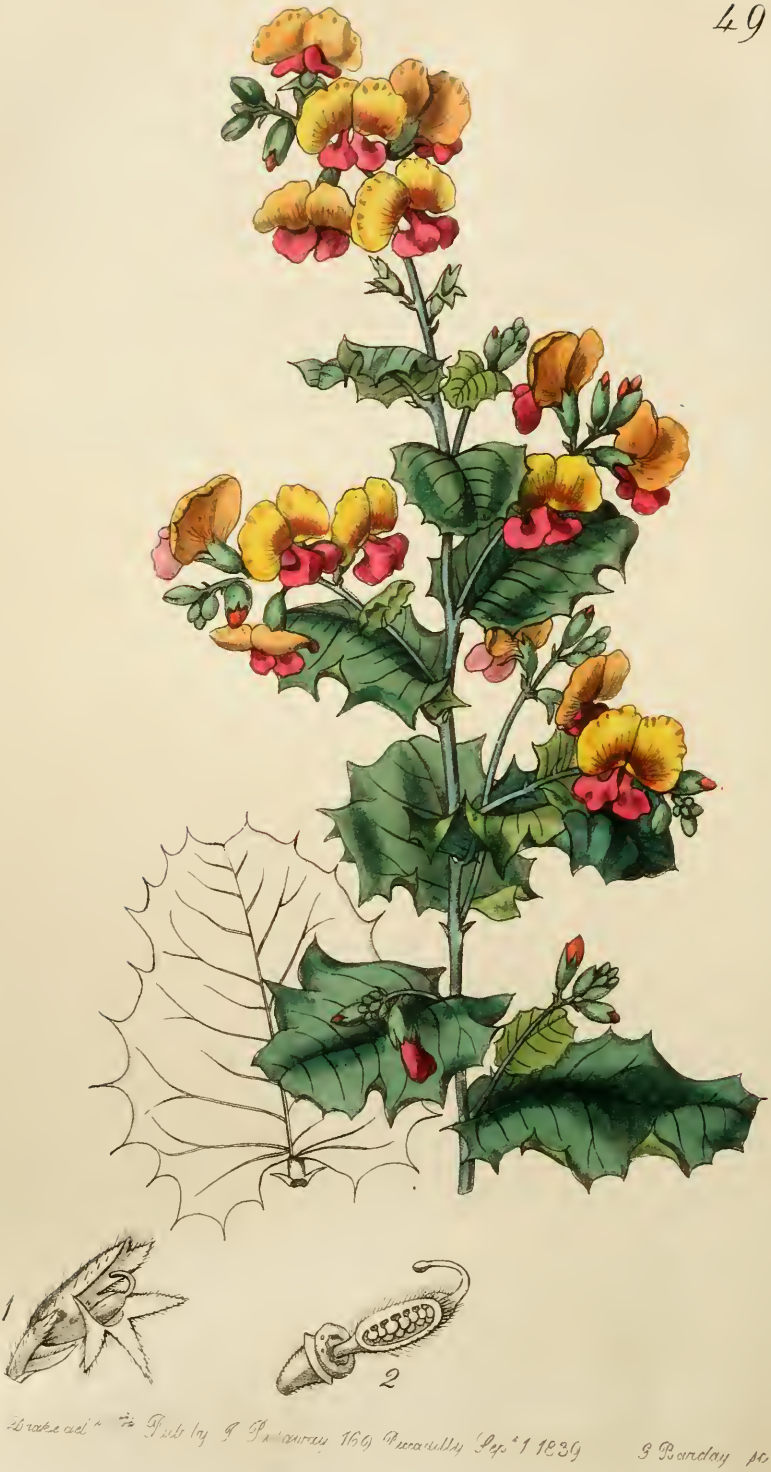

Miss Drake delⁿ. Pub by J. Ridgway 169 Piccadilly Sepᵗ 1 1839 J. Barclay sc.

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CHORŌZĔMĂ vărĭūm.

Various-leaved Chorozema.

DECANDRIA *MONOGYNIA.*

Nat. Ord. FABACEÆ or LEGUMINOSÆ, § PAPILIONACEÆ.
CHOROZEMA. Botanical Register, vol. 12. *fol.* 986.

C. *varium;* foliis subsessilibus subrotundo-cordatis undulatis spinoso-dentatis integrisque pubescentibus, racemis erectis multifloris foliis paulò longioribus, calycibus basi obtusis pilosis tubo dentibusque subæqualibus. *Bentham in Bot. Reg.* 1839. *miscell. no.* 63.

Legumen $\frac{1}{2}$-*pollicare, obovatum, inflatum, subpubescens, venis transversis approximatis elevatis in ventre evanescentibus, intus glabrum.* Semina *circiter* 20, *olivacea, ossea, lævigata, grani Milii magnitudine.*

Of the beautiful Flora of the Swan River Colony I propose so soon to give an account in the forthcoming Appendix and Index to this work, that it is unnecessary to say more on this occasion than that this plant is one of its prettiest ornaments.

It was introduced in the year 1837 by Mr. Smart, who gave seeds of it, marked "Native pea," to the Horticultural Society, in whose garden it was speedily raised, producing two or three varieties, one of which has the leaves almost entirely free from spiny toothings, but not different in any other respect. In its own country it must be a very rare plant, for I do not find it in any of the collections of dried specimens which I have examined, excepting in that sent home by Mr. Drummond in the course of the present season, and even there it only occurs in fragments, with the ripe pods adhering to them.

With respect to its cultivation, Mr. Fortune, who raised it in the Garden of the Horticultural Society, and whose subsequent management of it was very successful, has given me the following note.

"In the autumn of 1837 the seed of this beautiful plant was sown in light soil, and placed in a frame nearly exhausted. It soon vegetated, and was potted in fresh light soil, composed of two-thirds peat and one-third loam and sand. It was soon after placed in a cool pit, and regularly shifted into a larger pot as it required it. Under this treatment it grew freely, and was covered with its beautiful flowers for several months in the early part of the present year.

"The only particular thing in its cultivation is, that it must always have plenty of air and not too much water, otherwise it is very apt to damp off at its neck soon after flowering.

"It is easily propagated from cuttings, treated in the usual way."

A fine plant exhibited by Mr. Halley of Blackheath, at one of the meetings of the Horticultural Society in Regent Street, received the Society's *Large Silver Medal*, which is given on those occasions exclusively for new ornamental plants of great beauty, never previously exhibited to the public.

Fig. 1. is a calyx, with one of the segments turned back to shew the ovary and style; 2. is a longitudinal section of the ovary.

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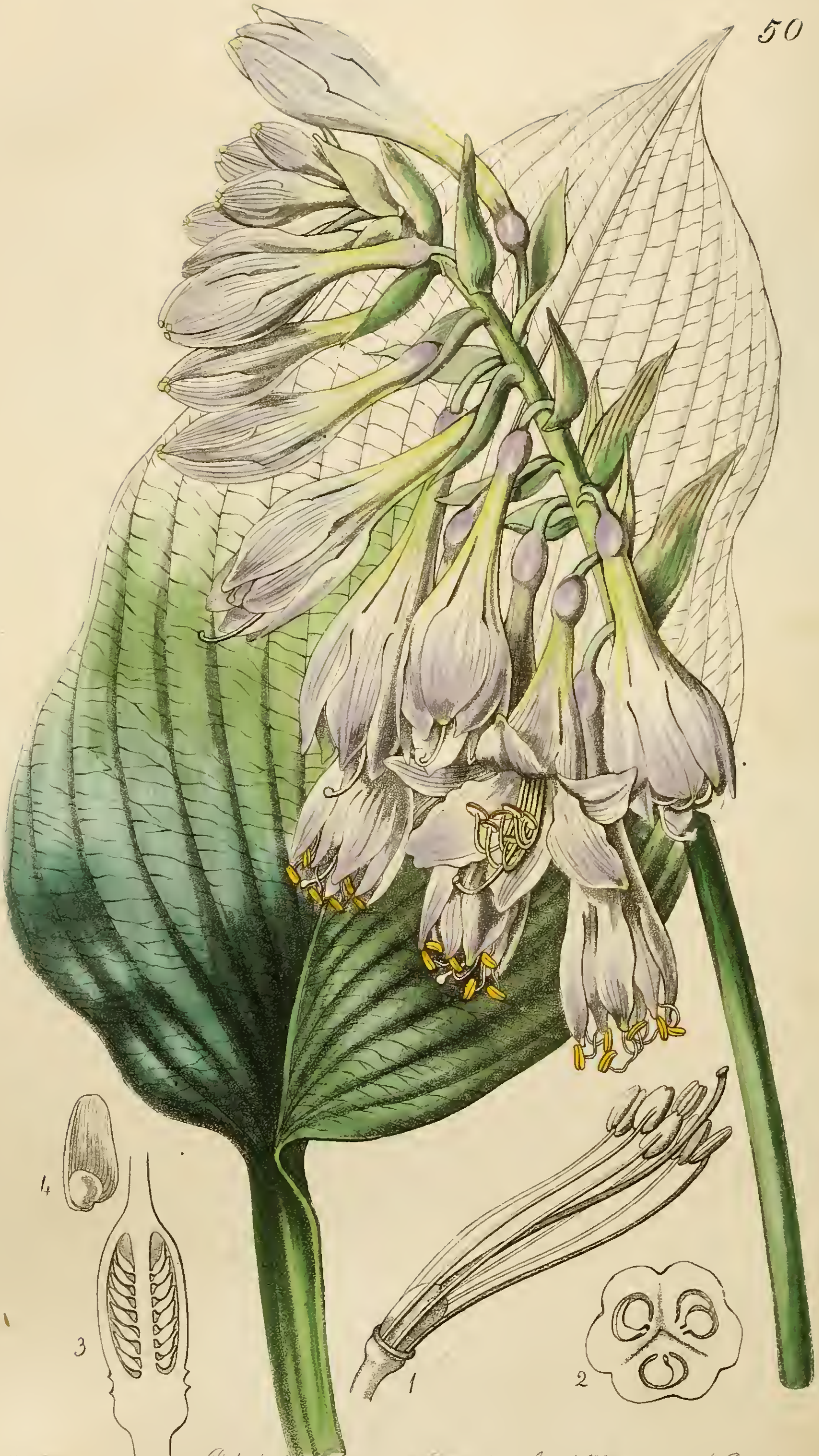

Miss Drake del. *Pub by J. Ridgway 169 Piccadilly Sep 1 1839* *G. Barclay sc*

* FŪNKĬĂ Siebōldī.

Siebold's Funkia.

HEXANDRIA *MONOGYNIA.*

Nat. ord. LILIACEÆ.

FUNKIA, Spreng. *Perigonium* corollinum, tubulosum; tubo brevi, limbo sex-partito, subbilabiato, connivente v. patentiusculo. *Stamina* 6, basi limbi inserta, subfasciculatim declinata. *Ovarium* triloculare. *Ovula* plurima, biseriata, adscendentia, anatropa. *Stylus* filiformis, declinatus; *stigma* subtrigonum, læve. *Capsula* oblongo-prismatica, trilocularis, loculicido-trivalvis. *Semina* plurima, ascendentia, plano-compressa; *testâ* membranacea, nigra, laxa, in alam apice longiorem producta, *raphe* inter testam liberâ, adscendente. *Embryones* plures, dimidio albumine longiores, inter communem cavitatem axilem paralleli, extremitatibus radicularibus incrassatis umbilico proximis.——Herbæ *in China et Japonica obviæ;* radice *fibroso-fasciculatâ,* foliis *radicalibus petiolatis, ovatis cordatisve, acuminatis, plicato-nervosis, caulinis nullis,* v. *subsessilibus,* floribus *racemosis candidis v. cæruleis.* Endl. gen. pl. no. 1100.

F. *Sieboldi;* foliis oblongis acuminatis multinerviis subtùs glaucis, racemo denso secundo multifloro, floribus pendulis clavato-infundibularibus, pedicellis bracteis erectis brevioribus.
F. Sieboldiana. *Bot. Mag. t.* 3663.
Hemerocallis Sieboldiana. *Bot. Cab. t.* 1869.

Bracteæ *unciales et ultrà, ovatæ, acutæ, herbaceæ, punctis pellucidis sine ordine notatæ, pedicellis duplò longiores.* Alabastrus *apice ventricosus, ovalis, versus basin attenuatus teres.* Stigma *capitatum, obsoletè trilobum, incurvum, ultra perianthium extensum, incurvatum.* Ovula *citò post perianthii delapsum alata.*

This very pretty herbaceous plant is one of Dr. v. Siebold's acquisitions in Japan, and has now become rather common in the collections near London. It differs from the old species of the gardens (*Hemerocallis cærulea* now *Funkia ovata,* and *Hemerocallis japonica* or *alba* now *Funkia subcordata*) n its much smaller and more numerous flowers, which are neither blue nor white, but of a pale lilac colour.

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* So named by Sprengel, after Henry Christian Funck, a German Cryptogamic Botanist, who lived in the early part of the present century.

It proves a hardy perennial, growing about a foot high in any rich garden soil, particularly if planted in a situation which is rather dry during the winter, but well supplied with moisture during the growing season, and rather shaded from the mid-day sun.

It flowers about the end of June, each flower lasting but for one day, but the others come out in succession for several days.

The plant is increased freely by dividing the old roots, when in a dormant state, or by seeds (which it produces freely) sown in the spring. Seedling plants will not flower before the second season.

Fig. 1. represents the stamens and pistil, the floral envelopes being removed ; 2. is a transverse section of the ovary ; 3. is a vertical section of the same part ; 4. is an ovule a little advanced towards the state of a seed.

The accompanying figure was taken from specimens communicated by Robert Mangles, Esq. of Sunning Hill.

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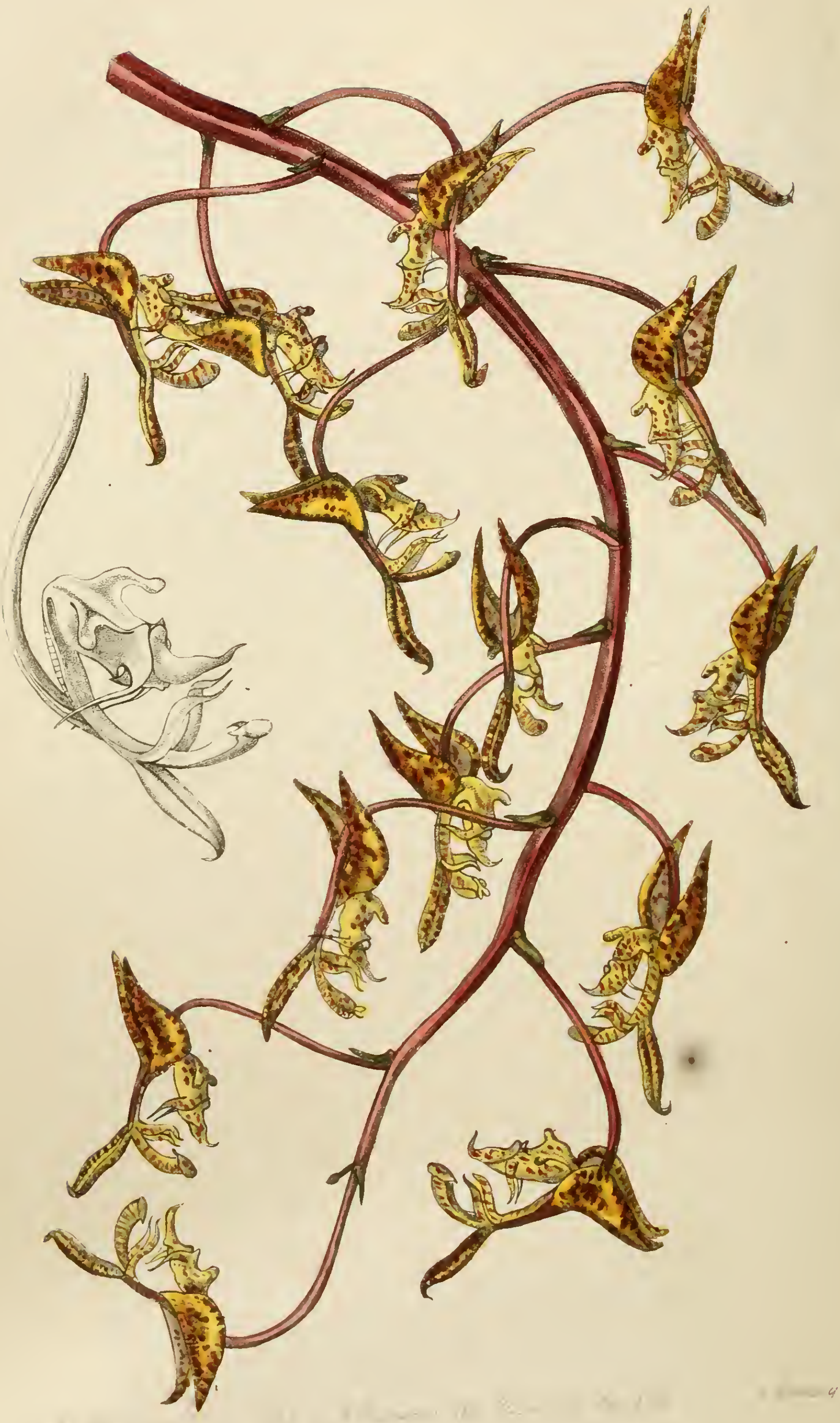

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GONGŌRĂ fūlvă.

Tawny-flowered Gongora.

GYNANDRIA *MONANDRIA.*

Nat. ord. ORCHIDACEÆ, § VANDEÆ.
GONGORA, Fl. Peruv. Botanical Register, vol. 19. *fol.* 1616.

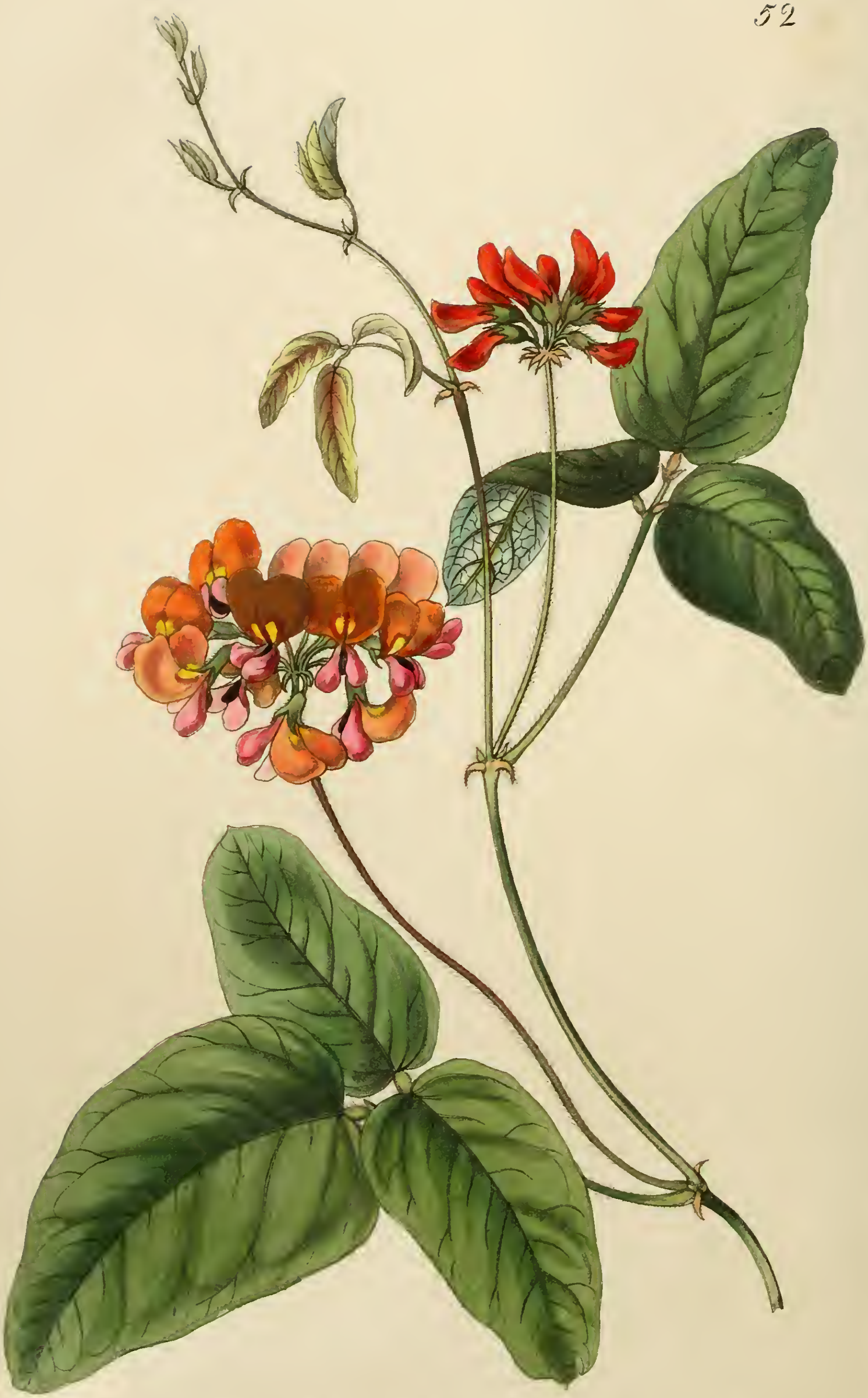
G. *fulva;* hypochilii convexi cornubus lateralibus elongatis capitatis aristis setaceis, epichilio acuminato æquilongo, pedicellis columnâ triplò longioribus.

The drawing of this plant has been lying in my portfolio since the month of July, 1836, when I received a specimen from Mr. Barker with the following memorandum.

"The leaves of the plant are very similar in form to the Gongora maculata, but are somewhat larger, and perhaps a little finer or thinner. The bulbs are deeply ribbed, and a little longer than maculata. It is highly fragrant, scenting the whole house; the scent approaches nearer that of the violet than any thing I know."

Mr. Barker considered the plant a variety of Gongora maculata, already figured in this work at fol. 1616; and perhaps rightly. But at the same time, till we have a more certain knowledge of the value of the differences found in the flowers of Orchidaceous plants, it seems necessary to distinguish it specifically. In addition to the peculiarities adverted to in the above memorandum, and the darker colour, the flowers of this are not more than half the size of *G. maculata,* and the raceme is far more contracted, in consequence of the shortness of the pedicels. I also find that the lateral horns of the hypochilium are terminated by a round dilated head; as is represented in the magnified flower of the accompanying plate.

September, 1839.



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* ZĪCHYĂ trĭcŏlŏr.

Three-coloured Zichya.

DIADELPHIA *DECANDRIA.*

Nat. ord. FABACEÆ, *or* PAPILIONACEÆ.

ZICHYA (*Hügel msc.*) *Calyx* campanulatus bilabiatus, labio superiore bidentato, inferiore tripartito. *Corollæ vexillum* unguiculatum, late orbiculatum, emarginatum, reflexum, basi biappendiculatum, alis longius. *Alæ* oblongæ, carinæ ultra medium adhærentes. *Carina* incurva, obtusa, alis brevior v. subæquilonga. *Stamina* distincte diadelpha, *filamento* vexillari basi recto inarticulato. *Antheræ* uniformes. *Vagina* disci nulla. *Ovarium* pluriovulatum. *Stylus* brevis, adscendens, superne in *stigma* subcapitatum, sæpius dilatatum v. breviter appendiculatum desinens. *Legumen* oblongo-lineare, compressum, coriaceum, sutura seminifera incrassata, intus isthmis cellulosis multiloculare. *Semina* strophiolata.——Frutices *volubiles.* Folia *pinnatim trifoliolata*, foliolis *stipellatis.* Pedunculi *axillares, apice umbellatim multiflori.* Bracteæ *et* stipulæ *parvæ, rarius foliaceæ.* Calyces *sæpius pilis fuscis villosi.* Corolla *coccinea.* Bentham in Hugel's Arch. t. 1.

Z. *tricolor;* foliolis ovato-oblongis obtusis utrinque præcipuè subtùs sericeis, calycibus pilis appressis ferrugineis villosis, vexillo cuneato, alis carinâ obtusissimâ longioribus, stigmate minuto.

Caules *volubiles, pilis appressis rufescentibus sericei.* Folia *trifoliolata, utrinque sericea;* petiolo *densè piloso;* stipulis *triangularibus, subtùs villosis, suprà glabris sulcatis;* foliolis *exactè ovato-oblongis, obtusis, apiculatis, ne minimè quidem angulatis vel retusis, lateralibus petiolatis.* Pedunculi *axillares, foliis longiores, sericei, floribus umbellato-corymbosis.* Calyx *pilis appressis ferrugineis hirsutus, unguis vexilli longitudine, labio superiore bidentato, inferiore trifido.* Vexillum *cuneatum, retusum, angulis rotundatis, supra unguem bicallosum, amœnè lateritium, basi luteo biocellatum;* Alæ *roseæ, obtusæ, patulæ,* carinâ *atropurpureâ obtusissimâ longiores.* Stamina *diadelpha, inter se æqualia.* Ovarium *lineare, pubescens;* stylo *crasso, compresso, glaberrimo, sursùm incurvo et subulato;* stigmate *minuto, capitato.*

The genus Zichya has been formed by Baron Hügel at the expense of the older genus Kennedya, by separating from it the species figured in this work under the name of *Kennedya inophylla* (fol. 1431), *dilatata* (fol. 1526), and *glabrata* (fol. 1838), together with the *K. coccinea* of Ventenat, and by adding to it a pretty new species, from Swan River, which he has named *Z. Molly.* The genus thus constituted forms a very natural group, and one which, from its graceful twining habit, is particularly well suited to ornament greenhouses.

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* So named by Baron Hügel, in compliment to the Countess Molly Zichy-Ferraris, now Princess Metternich.

The plant now figured was sent me by Mr. Young, nurseryman, of Milford near Godalming; it is nearly related to *Z. dilatata*, from which it differs in the following particulars: the leaflets are not in the slightest degree angular, but exactly ovate oblong; they are not retuse, but simply obtuse; and they are downy on the upper side: the flowers are in looser heads, and the calyx is closely covered with brown hairs, not shaggy with spreading black hairs; besides which the flowers are not of one uniform colour, except the basal spots of the vexillum, on the contrary the keel is deep purple, the wings are bright rose colour, and the vexillum is a bright brick red.

To the six species now defined I have to add a seventh, for which I am indebted to Captain Mangles, who received the specimens from Swan River; and which, from the narrowness of its leaves, may be called *Z. angustifolia.*[*]

This plant may be increased by seeds, or by cuttings of the half-ripened wood in spring, inserted in a pot of silver-sand, covered with a bell-glass, and placed on a moderate hot-bed. In potting off the cuttings when rooted none of the sand should be allowed to remain on the roots of the young plants, as it often causes them to canker and become unhealthy, or die. The young plants when first potted off should have rather a light sandy soil, but as they become stronger the soil in which they were potted should have a larger portion of loam in it; as this plant, like nearly all those belonging to Leguminosæ, prefers a strong soil and rather dry situation.

The species only requires to be in a cold pit or greenhouse during winter, kept a few degrees above freezing, but where air is admitted freely every fine day, to keep away the damp. Artificial heat is in fact injurious to most of the hardy greenhouse plants during winter, because it causes them to begin growing at a season when the sun has little power on vegetation; but as the spring advances such plants will bear a higher temperature, provided they have a free circulation of air every fine day. After these plants have flowered, they may be set out of doors, and require no other care than watering until autumn, when they should be shifted into larger pots two or three weeks before being put into the greenhouse or pit for winter.

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[*] Z. *angustifolia;* foliolis oblongo-linearibus basi dilatatis supra nitidis utrinque præsertim subtùs pilosis, calycibus pilis appressis ferrugineis villosis unguibus corollæ longioribus, vexillo obcordato, alis carinâ obtusissimâ longioribus, ovario glabro dorso tantum pubescente, stigmate minutissimo.

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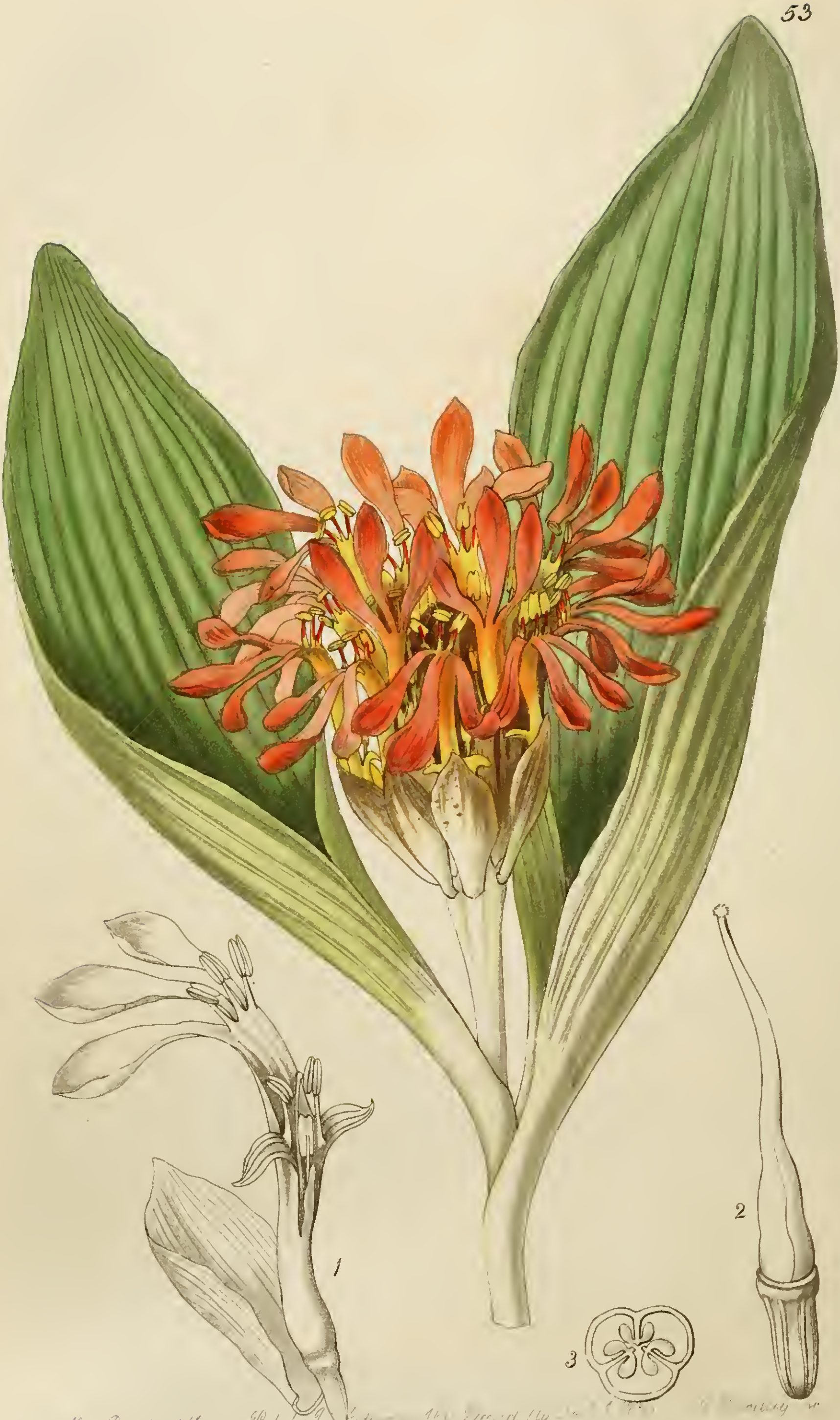

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DAUBĒNȲĂ fūlvă.

Tawny Daubenya.

HEXANDRIA *MONOGYNIA.*

Nat. ord. Liliaceæ.
DAUBENYA. Botanical Register, vol. xxi. *fol.* 1813.

D. *fulva*; foliis petiolatis ovalibus basi convolutis, capitulo pedunculato, dentibus labii posterioris distantibus, anteriore longè unguiculato.

Perianthium tubulosum, ore valdè obliquo, bilabiato; labio peripherico longè unguiculato trilobo; postico nano laciniâ intermediâ dentiformi. *Stamina* 6, basi laciniarum perianthii inserta; *antheris* erectis, introrsis, basi fixis. *Ovarium* uniloculare, cum stylo continuum, *placentis* tribus parietalibus, axin attingentibus, utrinque serie simplici polyspermis; *stigma* simplex.—— Planta *bulbosa, Africana, diphylla, Massoniæ facie;* foliis *ovalibus leviter striatis, basi cucullatis.* Scapus *centralis, foliis brevior,* floribus *subverticillatim capitatis,* bracteis *membranaceis, cucullatis* ——.

Bulbus *omnino Hyacinthi orientalis facie, sed minor.* Folia *ovalia, obtusa, basi convoluta, limbo* 4-5 *pollices longo.* Scapus *centralis,* 2-*pollicaris, teres, nudus;* racemo *subverticillato, denso, capituliformi, multifloro.* Bracteæ *membranaceæ, oblongæ, cucullatæ, tubo perianthii breviores.* Perianthii tubus *flavus,* 2 *lineas longus, teres;* limbus 1½ *pollicem longus,* 6-*lobus, quam maximè irregularis; lobus posticus parvus, erectus, dentiformis;* 2 *proximi paulò alterios in limbum, triangulares, acuti, patentes; tum tres alteri, longo intervallo distantes et quasi unguiculati, labium capituli peripheriam spectans efformant,* 3-*lobum, coccineum, laciniis obovatis concavis subæqualibus.* Stamina *laciniis perianthii opposita, æqualia;* antheris *linearibus, erectis, introrsis, utrinque bilobis.* Ovarium 1-*loculare, placentis* 3 *parietalibus* 6-8-*spermis, basi approximatis, sursùm distantibus effœtis; in* stylum *cavum, cum ovarii cavitate continuum, ad stigma usque simplicissimum punctiforme protractum.*

For a knowledge of this most remarkable plant I am indebted to Robert Barchard, Esq. of East Hill, Wandsworth, in whose garden it was observed in flower by Professor Royle. It had been received from the Cape of Good Hope, with other bulbs, but was believed to have been collected somewhere on the East Coast of Africa or in Madagascar.

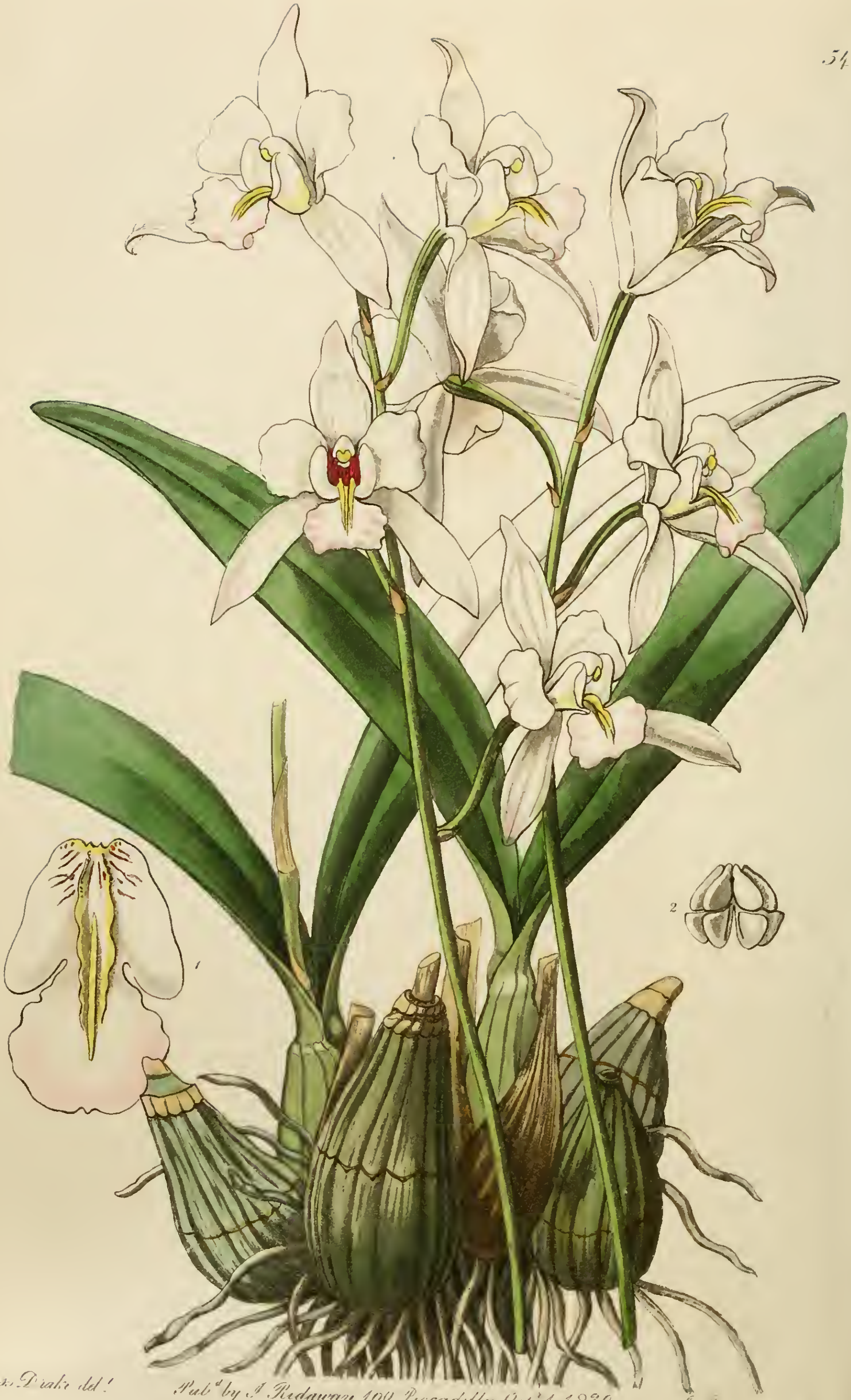
October, 1839.

It forms a new species of the very singular genus Daubenya, the original of which was published in this work some years ago (*Daubenya aurea*, vol. xxi. fol. 1813); but it throws no new light upon the affinities of the genus, which must still be supposed to be with Massonia.

The irregularity observable in the perianth of *Daubenya aurea*, is here carried still further, existing to as great an extent as in the most oblique forms of *Babiana* among Iridaceæ; and it adds one to the many already known facts leading to the conclusion that irregularity in the floral envelopes cannot alone be taken as a sound mark of ordinal distinction. Certainly Liliaceæ has been hitherto regarded as one of the most regular-flowered of orders, and yet here is a case in which irregularity in the flower is carried almost as far as the suppression of a part of the floral segments. It will doubtless be found, whenever the limitation of natural orders is reduced to any principles, and ceases to be arbitrary, that every large order contains irregular and regular flowered genera, and that the greatest value that can be assigned to such a circumstance is that of characterizing some division of the order.

Among Exogens *Ranunculaceæ*, *Papaveraceæ*, *Violaceæ*, *Geraniaceæ*, *Brassicaceæ*, *Apiaceæ*, *Asteraceæ*, *Campanulaceæ*, *Boraginaceæ*, *Caprifoliaceæ*, *Malpighiaceæ*, and a great many others have both regular and irregular flowers; *Scrophulariaceæ* with irregular flowers therefore should not be divided from *Solanaceæ*, any more than among *Amaryllidaceæ Hippeastrum* from *Vallota*.

In the accompanying figure 1. represents a flower, magnified; 2. an ovary, style, and stigma; 3. a transverse section of the ovary.



Miss Drake del!

Pub^d by J. Ridgway, 169 Piccadilly, Oct^r 1. 1839

G. Barclay sc.

LǼLĬĂ ālbĭdă.

White-flowered Lælia.

GYNANDRIA *MONANDRIA.*

Nat. ord. ORCHIDACEÆ, § EPIDENDREÆ.
LÆLIA. Botanical Register, vol. 21. *fol.* 1751.

L. *albida;* pseudo-bulbis ovalibus diphyllis, foliis linearibus acutis spicâ multiflorâ 4-plò brevioribus, sepalis oblongo-lanceolatis acutis vel subacuminatis petalisque latioribus acutis, omnibus apicibus reflexis fortiter mucronulatis; labelli altè trilobi tricostati lobis lateralibus erectis rotundatis intermedio duplo majore subrotundo obscure apiculato reflexo. *Bateman in litt. Botanical Register,* 1839, *misc. no.* 4.

Pseudobulbi *ovati, sulcati, diphylli.* Folia *angustè lanceolata, erecto-patula, scapo breviora.* Racemus *erectus,* 3-5-*florus.* Bracteæ *ovatæ, duræ, obtusæ, sessiles, nanæ.* Sepala *candida, apice rosea, oblongo-lanceolata, patula.* Petala *breviora, oblonga, obtusiora, revoluta, concolora.* Labellum *obovatum, trilobum,* 3-*lamellatum : laciniis lateralibus obtusis intermedio obtuso apiculato undulato rubescente multò brevioribus; lamellæ labelli luteæ, purpureo-punctatæ.* Columna *elongata, glabra.*

Oaxaca is the head-quarters of Orchidaceæ, in the kingdom of Mexico. It was there that Count Karwinski found the greater part of the species, of which specimens were brought home by him to Munich; it is there that the majority of European collectors have obtained the best part of what they have sent home; and where, lately, Mr. Hartweg has got together not fewer than 140 species for the Horticultural Society.

Oaxaca is the native country of this lovely plant, a notice of which has already been inserted in the present work, and than which none is more worthy of a figure; for its flowers are as sweet as a bed of primroses, which in fact they much resemble in odour. Count Karwinski found it near St. Pedro, in cool places, according to the herbarium of Dr. Von Martius, in which wild specimens exist.

It was originally sent me by Mr. Bateman; and I have since had it from Thomas Harris, Esq. of Kingsbury, who bought it, along with numerous Cacti, from a French collector who visited London two years ago. The pseudo-bulbs were so much like those of *Lælia autumnalis*, that, when the latter reached London from Mr. Hartweg, it was thought to be the same species.

It is the only Lælia as yet discovered with white flowers.

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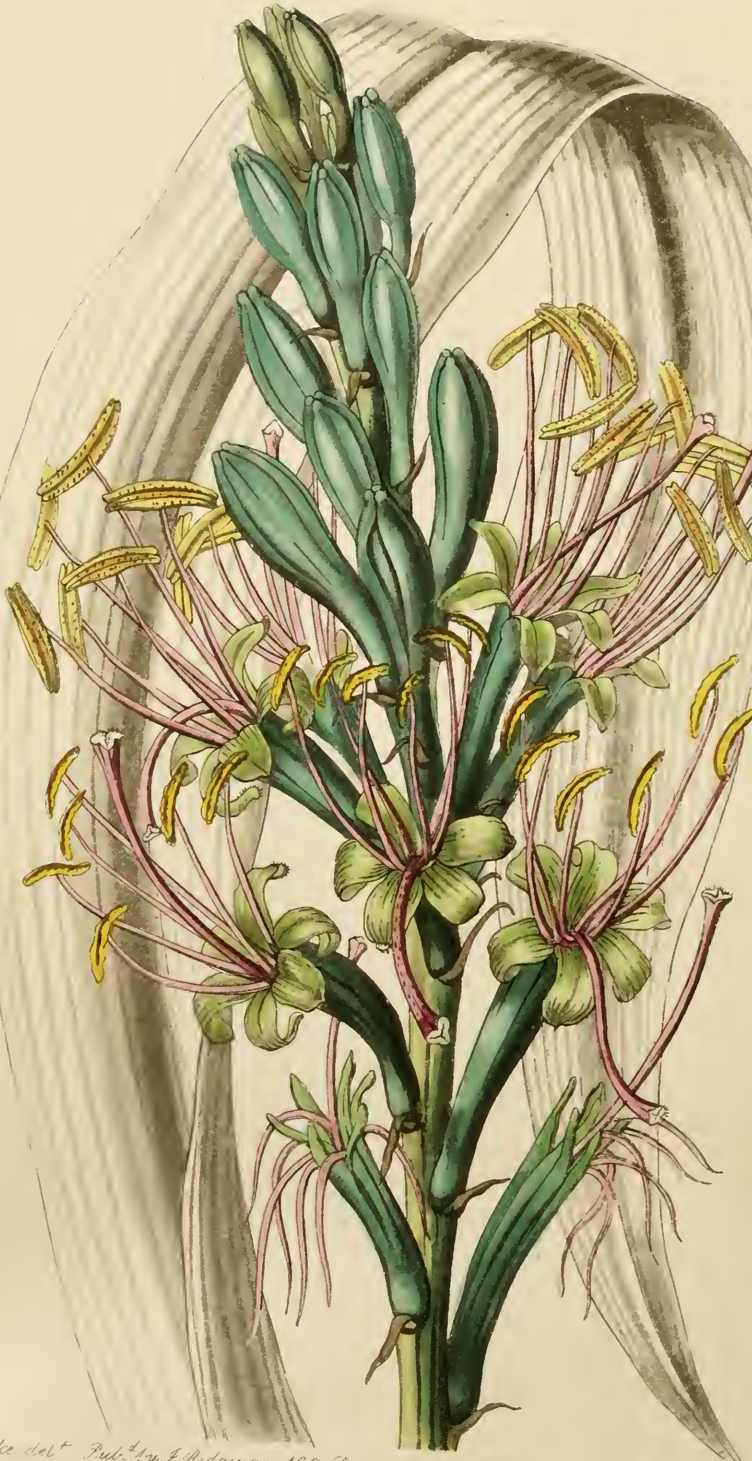

Drake delt. Pub.d by J. Ridgway 169 Piccadilly Oct.r 1 1830 G. Barclay sc.

* AGĀVĔ saponārĭă.

The Soap Aloe.

HEXANDRIA *MONOGYNIA.*

Nat. ord. AMARYLLIDACEÆ, § AGAVEÆ.
AGAVE. Botanical Register, vol. 14. *fol.* 1145.

A. *saponaria;* acaulis, inermis, glaucescens, rhizomate crasso carnoso, foliis teneris lanceolatis acuminatis semiamplexicaulibus, spicâ simplici, bracteis acuminatis ovario brevioribus (perianthii laciniis revolutis). *Botanical Register for* 1838, *misc. no.* 141.

A full description of this plant having been already given in the present work, it is needless to repeat it.

Mr. Skinner is related to have found it used as a substitute for soap in *Peru*, where he saw it growing on a sandy plain; it seems however to be Mexican; and to be very nearly the same as the *Polianthes mexicana* of Zuccarini, which is described as having white flowers, and is probably an allied species. That it is an Agave admits I think of no doubt; but, unlike those gigantic species with which we are most familiar, it flowers readily and does not then perish, but continues to grow without suffering; in fact it is a true perennial, while the others are analogous to annuals.

If this species should furnish a fibre capable of being used by the manufacturer, it will then, like the *Maguey*, its near ally, both produce a material from which linen may be woven, and assist in washing it afterwards.

Its cultivation is very simple. When it is in a growing state it should be placed in a temperature a little higher than a common greenhouse. It never requires much water, and in the winter months may be kept nearly dry. The soil used in potting should be fresh loam mixed with a considerable quantity of sand.

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* Αγαυος admirable, in allusion to the many useful purposes to which the genus is applicable.

When seeds are procured they should be sown in light soil, and placed in a little heat, where they will vegetate freely.

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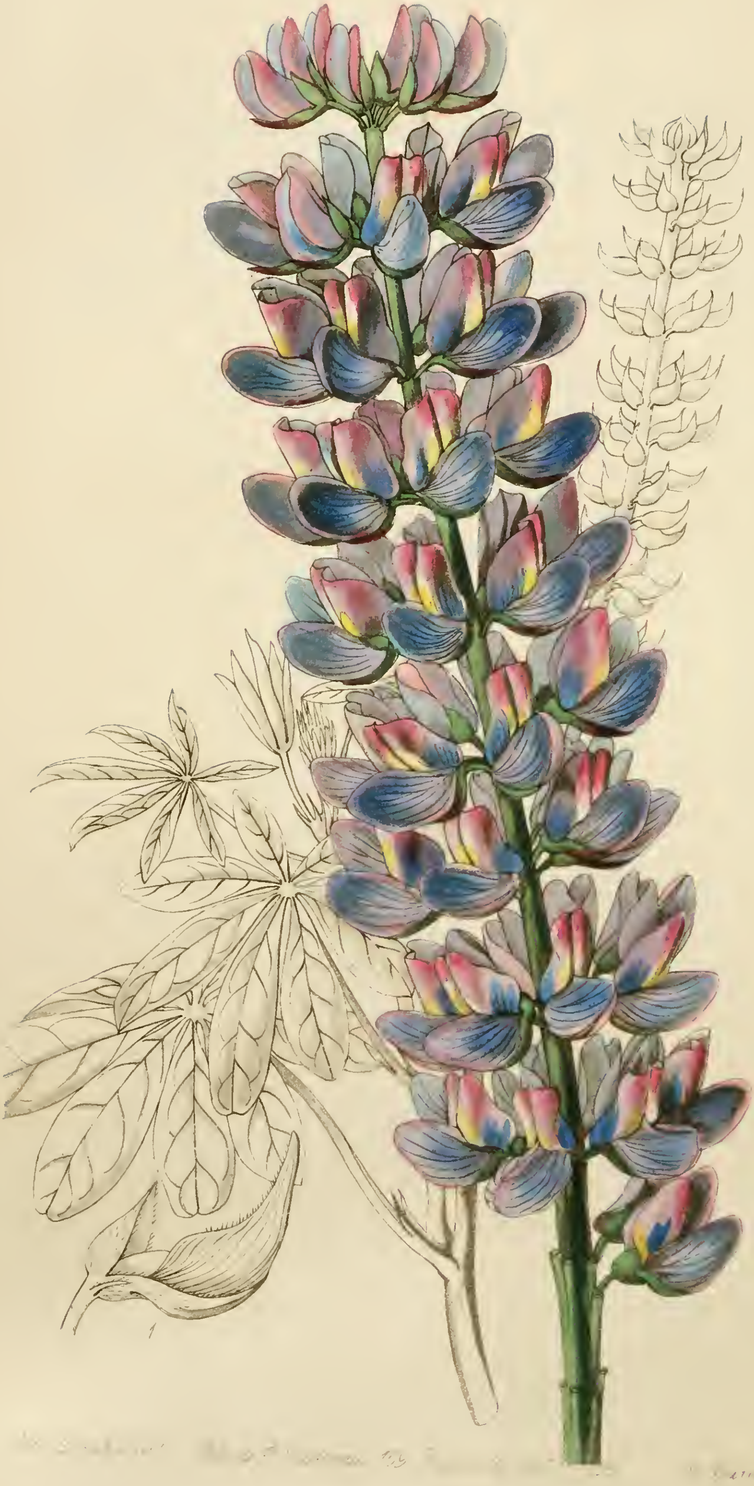

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* LUPĪNŬS Barkĕrī.

Mr. Barker's Lupine.

DIADELPHIA *DECANDRIA.*

Nat. Ord. FABACEÆ or LEGUMINOSÆ, § PAPILIONACEÆ.
LUPINUS. Botanical Register, vol. 13. *fol.* 1096.

L. *Barkeri;* annuus, pubescens, foliolis septenatis obovatis obtusis subtus pilosiusculis, stipulis adnatis setaceis pilosis, racemis verticillatis multifloris, alabastris rostratis distantibus tomentosis bracteis subulatis deciduis pilosis paulò brevioribus, calyce bracteolato: labiis utrisque acuminatis superiore bidentato.

To the crowd of species of this most difficult genus a new one is added with some hesitation; and, till the specific marks of the genus are better understood, it will be impossible to feel quite sure that varieties are not introduced under the name of species.

I must confess, however, that I can find no recorded plant to which the present can be referred, as a probable variety. It approaches nearest to *L. elegans* of this work, fol. 1581, and to *L. leptocarpus* of Mr. Bentham, but it seems to differ from both those plants in the somewhat remarkable character of the flower-buds being separated from each other by a considerable distance even when quite young. From *L. Hartwegii*, which is *L. bilineatus* of Mr. Bentham's "Plantæ Hartwegianæ," and which is I fear too near *L. mexicanus*, the short deciduous bracts and freedom from villosity sufficiently separate this plant.

It was obtained from Mexico by George Barker, Esq. of Birmingham, and is worthy of bearing his name, for it is a very handsome species.

It may be treated either as a half-hardy annual, or as a biennial; and, like *Lupinus Hartwegii*, flowers from the end of June until destroyed by frost in the autumn.

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* See Botanical Register, fol. 1198.

If treated as an annual the seeds should be sown as early as possible (February), so that the plants may have a long season before them; but if managed as a biennial, the seeds should be sown the previous year, about the beginning of August; kept in pots protected from frost during winter, and planted out in the open borders about the middle of May. It makes large plants, growing nearly three feet high, and flowering profusely all the autumn.

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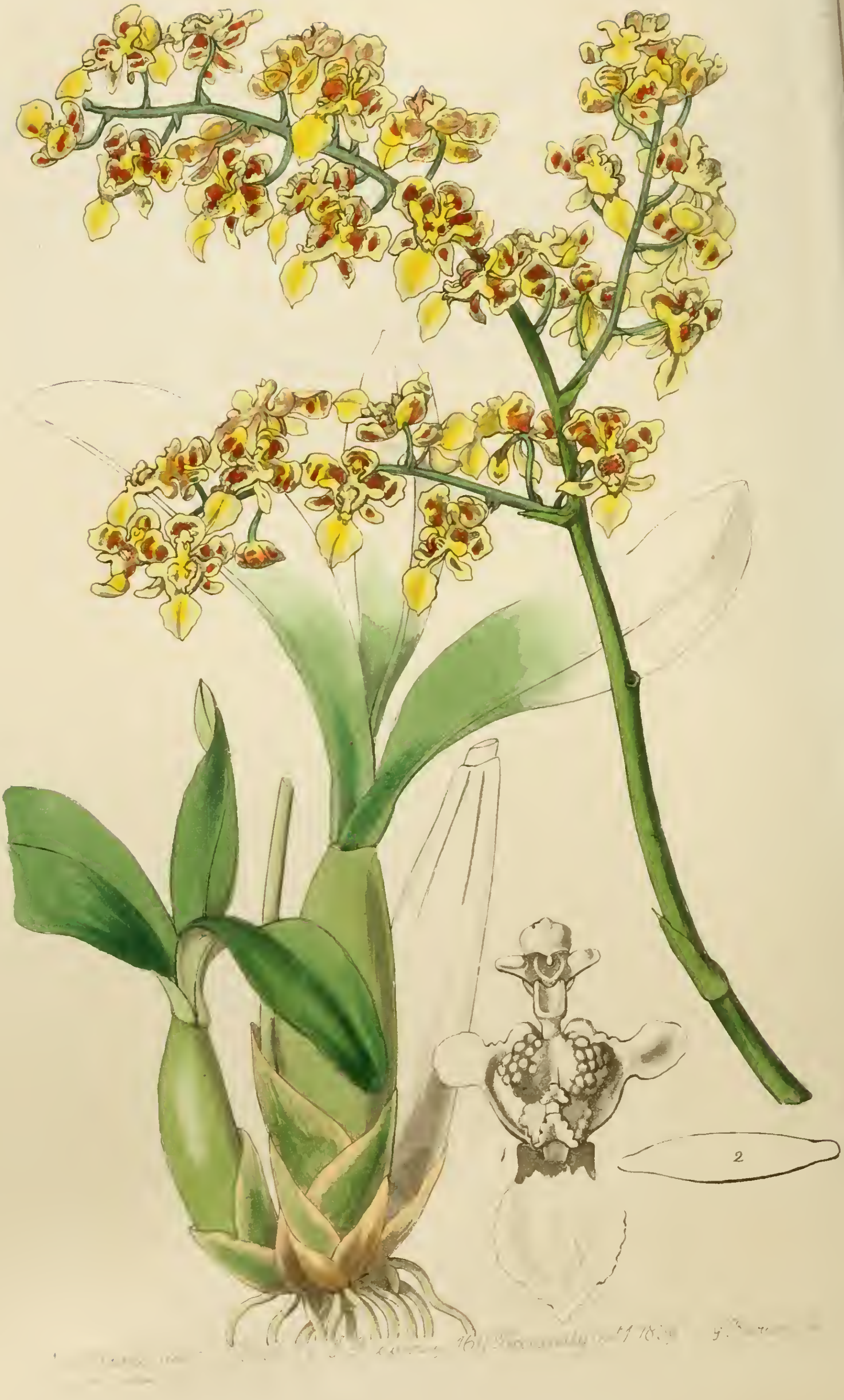

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ONCĬDĬŪM trullĭfĕrūm.

Trowel-lipped Oncidium.

GYNANDRIA *MONANDRIA.*

Nat. ord. ORCHIDACEÆ, § VANDEÆ.
ONCIDIUM. *Botanical Register, vol.* 13. *t.* 1758.

O. *trulliferum;* pseudobulbis elongatis ovalibus compressis 2-3-phyllis foliis ovalibus ferè æqualibus, scapo radicali rigido semel ramoso, sepalis lateralibus distinctis superioribus petalisque obtusis concavis, labelli lobis lateralibus nanis rotundatis intermedio trulliformi serrulato, cristâ verrucosâ medio depressâ lævi anticè dente ascendente serrato apice appendiculato, columnæ alis integerrimis ovatis obtusis.

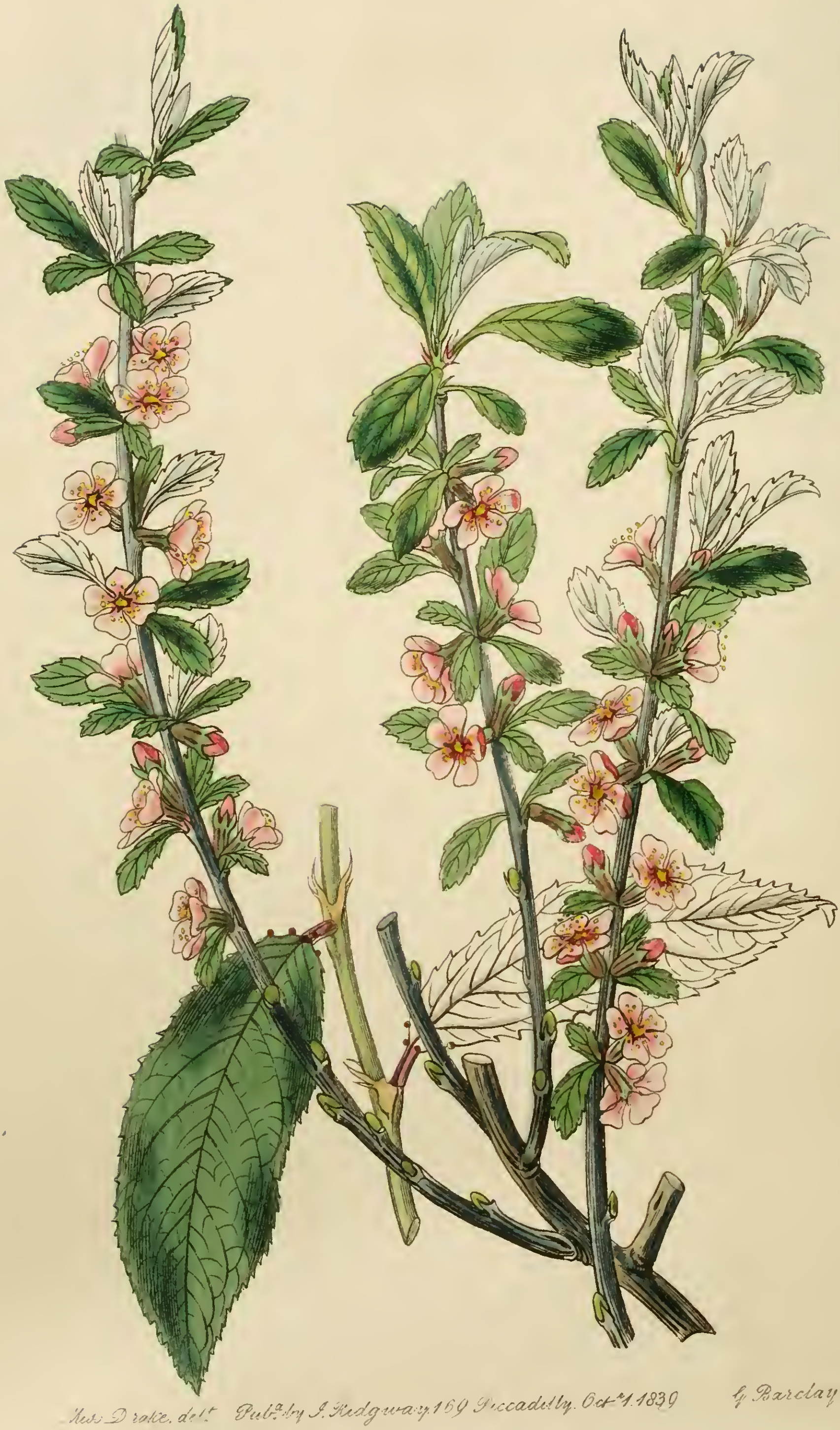
This addition to the extensive genus *Oncidium* is a native of Brazil, whence it was imported by Messrs. Loddiges, with whom it flowered in September, 1838.

The pseudo-bulbs are represented much diminished in the accompanying plate; they are in fact six inches long, and the leaves themselves are scarcely longer; they are pressed almost flat, so that although fourteen or fifteen lines broad, they are not more than three lines thick (fig. 2.).

The scape is stiff, erect, and branched in a simply pinnated manner, each branch being covered with flowers from the base to the apex. The figure of the lip (fig. 1.) is very uncommon; its middle lobe is produced into a segment much like a bricklayer's trowel, at the base of which there stands a strong tooth ascending, notched at the side, and terminated by a little notched appendage; this tooth rests by its back upon a tumour covered with regular warts, and forming the centre of three such tumours, the lateral ones standing nearer the base of the labellum, with a smooth wartless hollow between them.

In cultivation it requires the damp stove. It is easily managed; growing freely either in a pot with the usual soil, or suspended from the roof upon a block of wood. In either way, but particularly in the latter, it must be freely syringed during the growing season.

It is propagated in the same way as other plants of this kind.



Miss Drake. delt Pubd by J. Ridgway 169 Piccadilly. Octr 1.1839 G. Barclay sc

* AMY̆GDĂLŬS incānă.

Hoary-leaved Almond.

ICOSANDRIA *MONOGYNIA.*

Nat. ord. ROSACEÆ, § AMYGDALEÆ.
AMYGDALUS. Botanical Register, vol. 14. *t.* 1160.

A. *incana;* foliis obovatis oblongisque serratis subtus incano-tomentosis, calycibus cylindraceis: laciniis oblongis herbaceis tomentosis, petalis emarginatis tubo calycis brevioribus.
A. incana. *Pall. fl. Ross. p.* 13. *t.* 7.
A. nana, *var.* incana. *Loudon Arb. Brit.* ii. 674.

A rare and very pretty hardy shrub, inhabiting the range of Caucasus, or open plains near the foot of the promontory, near Teflis, among rocks. It is readily known from *A. nana,* by its leaves covered thickly with hoariness beneath; nevertheless it has been thought to be a variety of that species. This was the opinion of Guldenstädt who first discovered it; but it was not adopted by Pallas who first published it. M. DeCandolle has omitted the plant in his Prodromus, and Mr. Loudon in his Arboretum Britannicum, not having seen the species, and being perhaps influenced by Pallas's bad figure of *A. nana,* adopted the views of Guldenstädt.

No two species can however be more truly distinct; and the characters by which they are distinguished, namely, the obovate coarsely serrated leaves hoary beneath, long downy calyx, and short petals, of the one, and the finely serrated leaves smooth on both sides, short smooth calyx, and long petals, of the other, I find to be uniform in the wild plant. In my specimens from the Caucasus, sent me by the late M. De Klustine and Mr. Prescot, and in others from Iberia, which I owe to the liberality of the Imperial Museum of

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* See Botanical Register, fol. 1160.

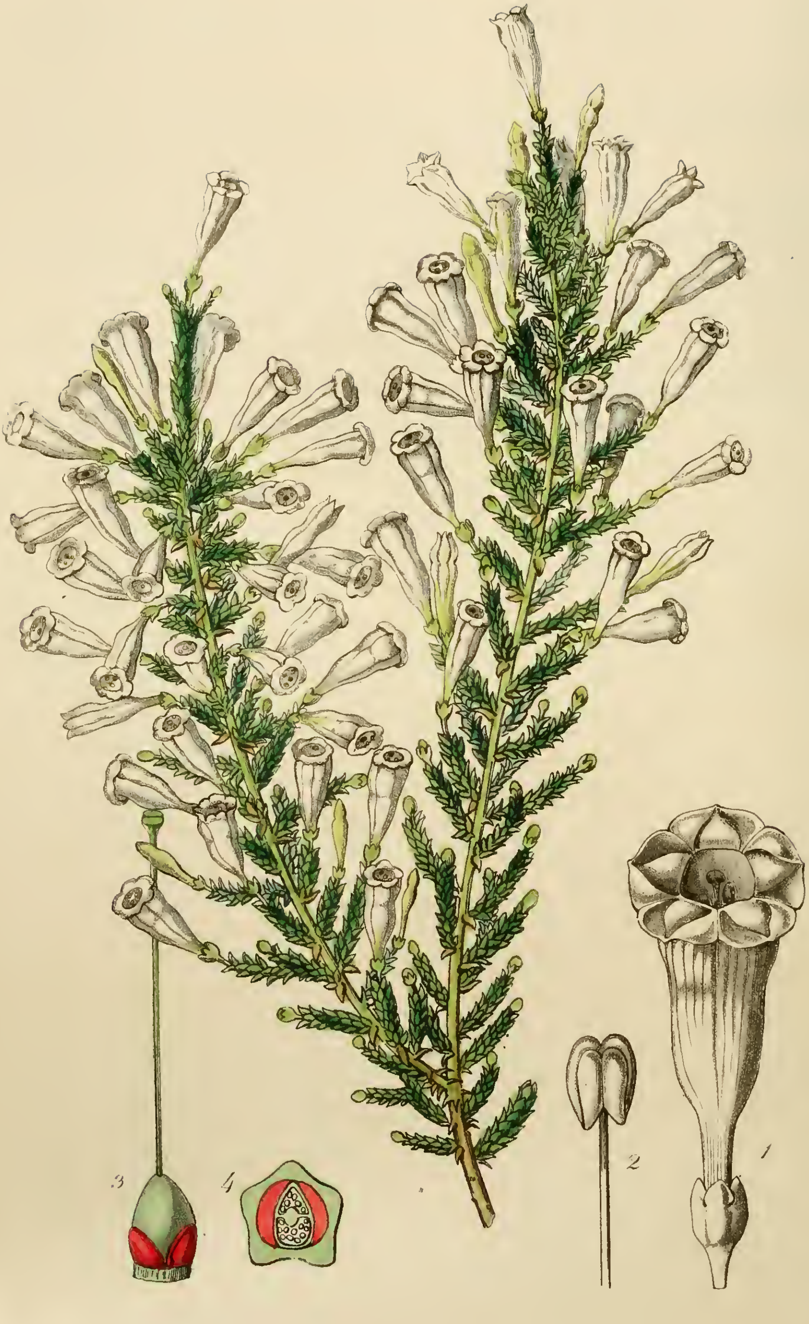
St. Petersburgh, all the features of the Garden plant are exactly preserved.

For the possession of it the Horticultural Society is indebted to Sir Oswald Moseley, Bart. in whose shrubbery at Rolleston Hall I first saw it growing in 1837.

It is a hardy middle sized shrub, flowering about the beginning of May, and growing well in any rather strong rich soil, but not in a damp situation.

It is increased by budding on the common plum stock about the middle or end of July.

The plant in the Garden of the Society was not in the least injured by the severe winter of 1837-8.



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FABIĀNĂ imbricātă.

Imbricated Fabiana.

PENTANDRIA *MONOGYNIA.*

Nat. ord. SOLANACEÆ.

FABIANA. Ruiz & Pavon. Calyx tubulosus semiquinquefidus. *Corolla* hypogyna, infundibularis, tubo sensim ampliato, limbo plicato leviter quinquelobo. *Stamina* 5, imo corollæ tubo inserta, inclusa, inæquilonga, apice incurva; antheris longitudinaliter dehiscentibus. *Discus* bilobus carnosus. *Ovarium* biloculare, placentis dissepimento adnatis, multiovulatis; *stylus* simplex, apice incurvus: *stigma* obliquum. *Capsula* calyce persistente inclusa, bilocularis, septicido-bivalvis, valvis apice bifidis, placentas coadunatas nutantibus. *Semina* plurima, subglobosa. *Embryo* intra albumen carnosum subperiphericus, arcuatus.——Suffrutices *austro-americani, viscosi v. resinosi;* foliis *alternis sparsis* v. *imbricatis;* pedunculis *sub-axillaribus* v. *extra-axillaribus, solitariis, unifloris.* Endlicher genera, no. 3838, *paucis mutatis.*

F. *imbricata;* foliis squamæformibus imbricatis obtusis, floribus sessilibus.
F. imbricata. *Fl. Peruv. II. p.* 12. *t.* 122.

This pretty little shrub was originally discovered in Chili by Dombey, from whose herbarium specimens are now before me. It was first published in the Flora Peruviana, having been found by the botanists attached to the Spanish survey of Western South America, in plains and on the sandy banks of streams in the same country. Recently it was met with plentifully by Mr. Cuming, of whose dried plants it is no. 140.

It forms a small bright green shrub, with the habit of a Tamarisk, or rather of a Thuja, and when in flower is loaded with snow-white blossoms resembling those of some heath; it may be in fact regarded as a genus of Solanaceæ with the habit of Ericaceæ.

It is not easy to deny the justice of the views of Schykofsky and Schleiden regarding placentation in such plants as this is; for we find the placentæ distinctly separate from the carpellary leaves, and to all appearance constituting a formation with a central origin. It can hardly indeed be doubted that the central placentation is of very common occurrence; indeed I suspect we shall find upon more exact enquiry that the placentary matter is not always confined to the *interior* of the ovary, but that it occasionally finds its way to the *outside, in which case it becomes the stigmatic tissue, and is surrounded by the apex of the style either in the form of a sort of toothing as in* Impatiens, *or like a rim as in* Ericaceæ, *or as what botanists call the stigmatic indusium in* Goodeniaceæ, &c.

Messrs. Lucombe, Pince, and Co. of Exeter supplied me with a flowering specimen of this plant in May of the present year; and I have also had it from Messrs. Rollissons of Tooting.

It is multiplied by cuttings or seed in the same manner as Cape heaths; and must be cultivated in the greenhouse or pit, sufficiently protected from frost in winter. The situation in which it is placed should be near the glass, and where it can have plenty of air. In the summer months it should be turned out of doors, but not exposed to too bright sunshine. In other respects it may be treated as common greenhouse plants. The soil which suits it best is peat and sand.

Fig. 1. represents a magnified view of the entire flower; 2. is a stamen; 3. is an ovary, with its double two-lobed crimson disk; 4. represents the same part cut through transversely, and shews that one of the cells of the ovary is much smaller than the other.

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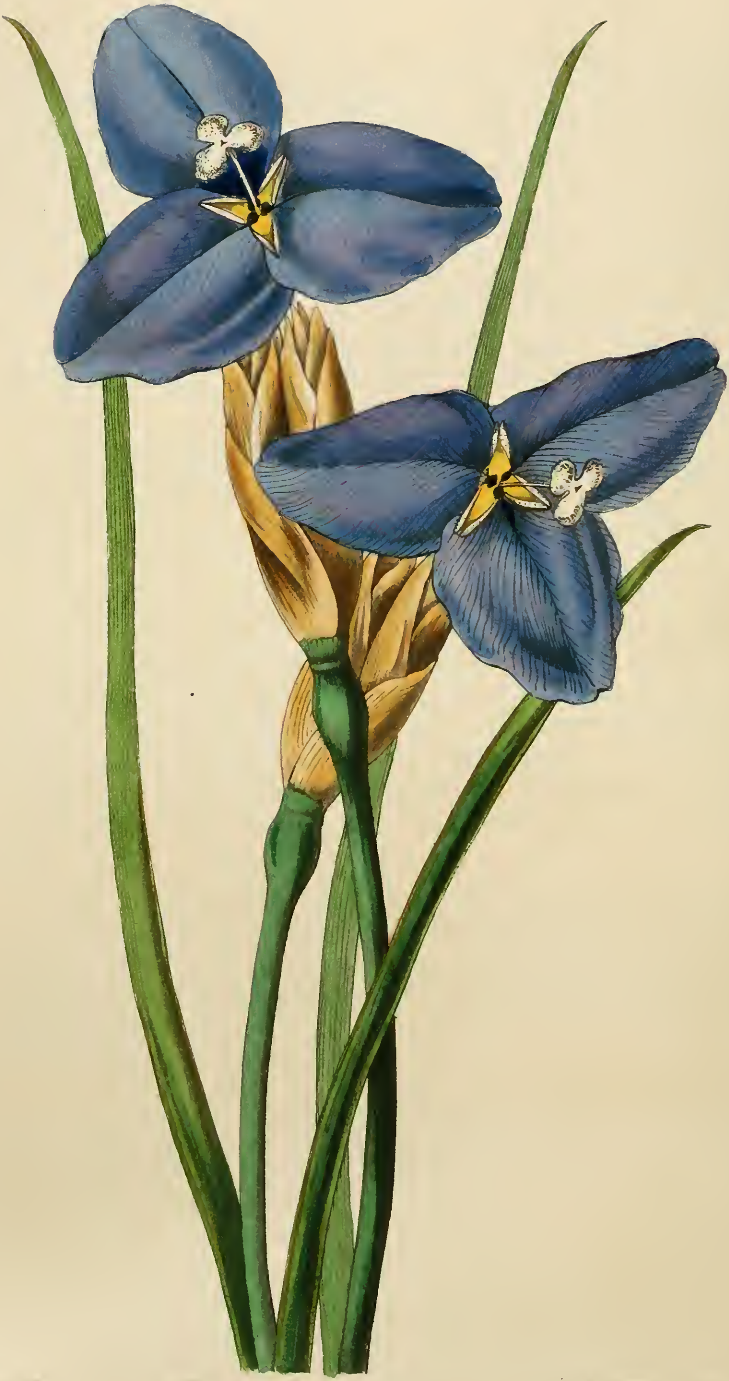

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* PATERSŌNĬĂ sapphirīnă.

Sapphire Patersonia.

MONADELPHIA *TRIANDRIA.*

Nat. ord. Iridaceæ.
PATERSONIA. Botanical Register, vol. 1. *fol.* 51.

P. *sapphirina;* foliis linearibus viridibus scapoque glabris junioribus tenuissimè ciliatis: striis æqualibus, scapo foliorum longitudine, spathis multifloris carinâ interiorum tomentosâ, stigmate erecto, antheris isoscelo-triangularibus.

Folia *bipedalia et ultra,* 2 *lineas lata; striis æqualibus; juniora pilis minutis ciliata citò deciduis.* Capsulæ *oblongæ, angustæ, trigonæ, apice et angulis cum perianthii basi persistente tomentosæ; loculicido-trivalves, polyspermæ.* Semina *atra, ascendentia, oblonga, mutuâ pressione angulata, tenuissimè acustriata, angulo centrali loculorum adnata, sine ullo columnæ centralis vestigio;* raphe *tenuis;* chalaza *elevata subfungosa;* albumen *corneum, amylo plenum, oleosum, revera album, sed luce testæ violaceâ transmissâ quasi violaceum;* embryo *minimus in cavitate hilo proximâ obliquâ inclusus.*

A beautiful herbaceous plant, requiring the simplest greenhouse cultivation, and inhabiting the Swan River Colony, whence its seeds were obtained by Mr. Mangles. Unfortunately the brilliant sapphire flowers, to which colours fail to do justice, are of short duration: a large plant will however produce numerous flower-heads, and these, by the number of their blossoms, compensate for their ephemeral existence.

The species now represented differs from all mentioned in Dr. Brown's Prodromus, and in the account of Swan

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* So named by Dr. Brown, as he tells us, in honour of his "very dear friend, William Paterson, a celebrated traveller, lieutenant-governor of New South Wales, of which region he for many years investigated the Flora with great zeal." This was doubtless an excellent reason for naming some New Holland plant after Colonel Paterson, but none for doing so at the expense of M. Labillardière, who first called this genus Genosiris.

River plants described in the Appendix to the Botanical Register, now in course of publication, in its long narrow leaves and scape, which are quite destitute of hairiness, except when the former are very young, at which time they are fringed with delicate down. Besides these there exists at the Swan River a species, of which I have a specimen, that I presume to be new, but which I am unable to publish with confidence as such, which must be by far the handsomest of all; its scape is two feet high, and much longer than the leaves, which are glaucous, red-edged, smooth, and half an inch broad. Specimens were sent home by Mr. Drummond, from whom the seed might be readily obtained, if this description, brief as it is, were transmitted to him.

The only description of the seed which I have seen is in Endlicher's Genera, no. 1234, where it is said to have an axile embryo shorter than the fleshy albumen. Such, however, is by no means the structure of this species, of which the ripe seeds have a very minute embryo lying in an oblique cavity of the albumen, in the region of the hilum.

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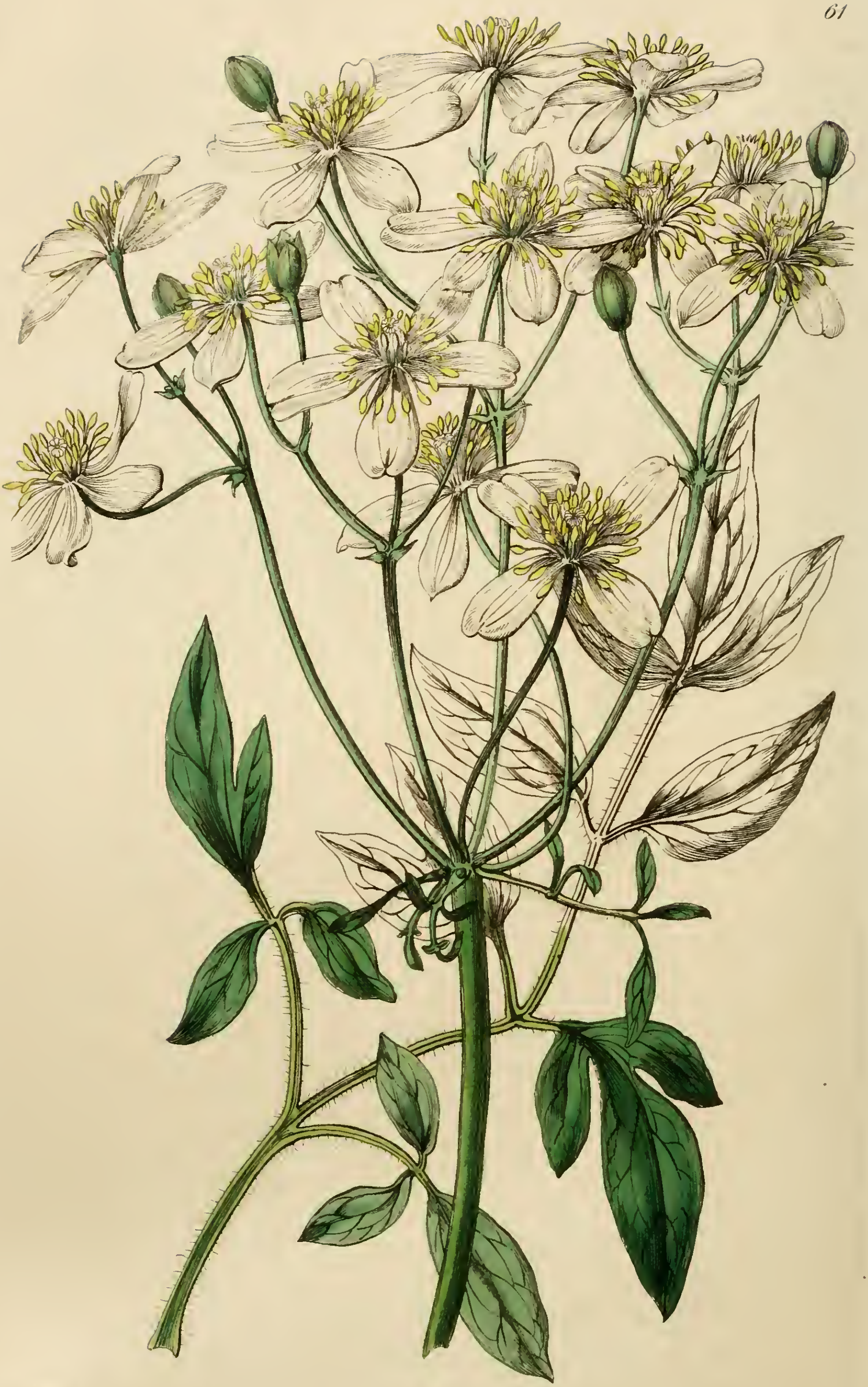

Miss Drake del^{t} Pub^{d} by J. Ridgway. 169 Piccadilly. Nov.^{r} 1 1839. G Barclay sc

CLĒMĂTĬS lathyrifŏlĭă.

Large-flowered erect Clematis.

POLYANDRIA *POLYGYNIA.*

Nat. ord. RANUNCULACEÆ.
CLEMATIS. Botanical Register, vol. 2. *fol.* 97.

C. *lathyrifolia;* herbacea, erecta, foliis pinnatis: foliolis ovato-lanceolatis integerrimis 2-3-lobisve, corymbis paniculatis, sepalis 4-5 obovatis tomentosis, carpellis cum caudâ villosis.
C. lathyrifolia. *Besser. sec. Reichenbach fl. excurs. germ.* 2. 734.

The two common hardy herbaceous plants, *Clematis erecta* and *angustifolia*, although placed at a great distance from each other in M. DeCandolle's distribution of the genus, are nevertheless so nearly related that there can be no doubt of their immediate affinity. In fact they cannot be distinguished by the characters given them in the Prodromus, which are almost equally applicable to either. *C. angustifolia* is said to have one flower only on a common stalk, which is never the case in the garden specimens, neither do I find it so in my wild specimens of the supposed variety *C. lasiantha* from Dahuria. The real distinction between them consists, as Reichenbach has well observed, in the narrow leaves and hairy carpels of one, as compared with the broad ovate leaves and smooth carpels of the other.

But to which are we to refer the present plant? Reichenbach considers it a mere variety of *C. erecta*, which is impossible, for it has the leaves and fruit of *C. angustifolia;* but it will not arrange exactly with the latter plant, for its flowers are in a loose corymbose panicle, and are much larger, and its whole aspect is different; in the size of its flowers it corresponds with the above-mentioned *C. lasiantha*, which seems a good species, and not a mere variety of *C. angustifolia*. This may indeed be regarded as a variety of *C. lasiantha;*

but it wants the wool in which the flower-buds of that species are enveloped.

What its native country may be I am unable to ascertain; it is said by Reichenbach to have received its name from Professor Besser; but it is not noticed in that writer's Enumeration of the plants of Podolia, Bessarabia, and other dismemberments of the ancient kingdom of Poland, nor do I find a trace of it in any book except Reichenbach's Enumeration, above quoted.

I have only seen it in the garden of the Horticultural Society, where it was received from the late Mr. Fischer, of the Gottingen garden, under the name here adopted.

It is a very showy hardy perennial, growing three or four feet high in any good garden soil, and flowering freely from June to August.

It is increased freely by division of the old plant when in a dormant state, or by seeds, which should be sown in the spring; the seedlings will not flower before the second season.

It is rather a straggling plant if left to nature; but if tied up regularly to a stake, it makes a beautiful object in a flower garden.

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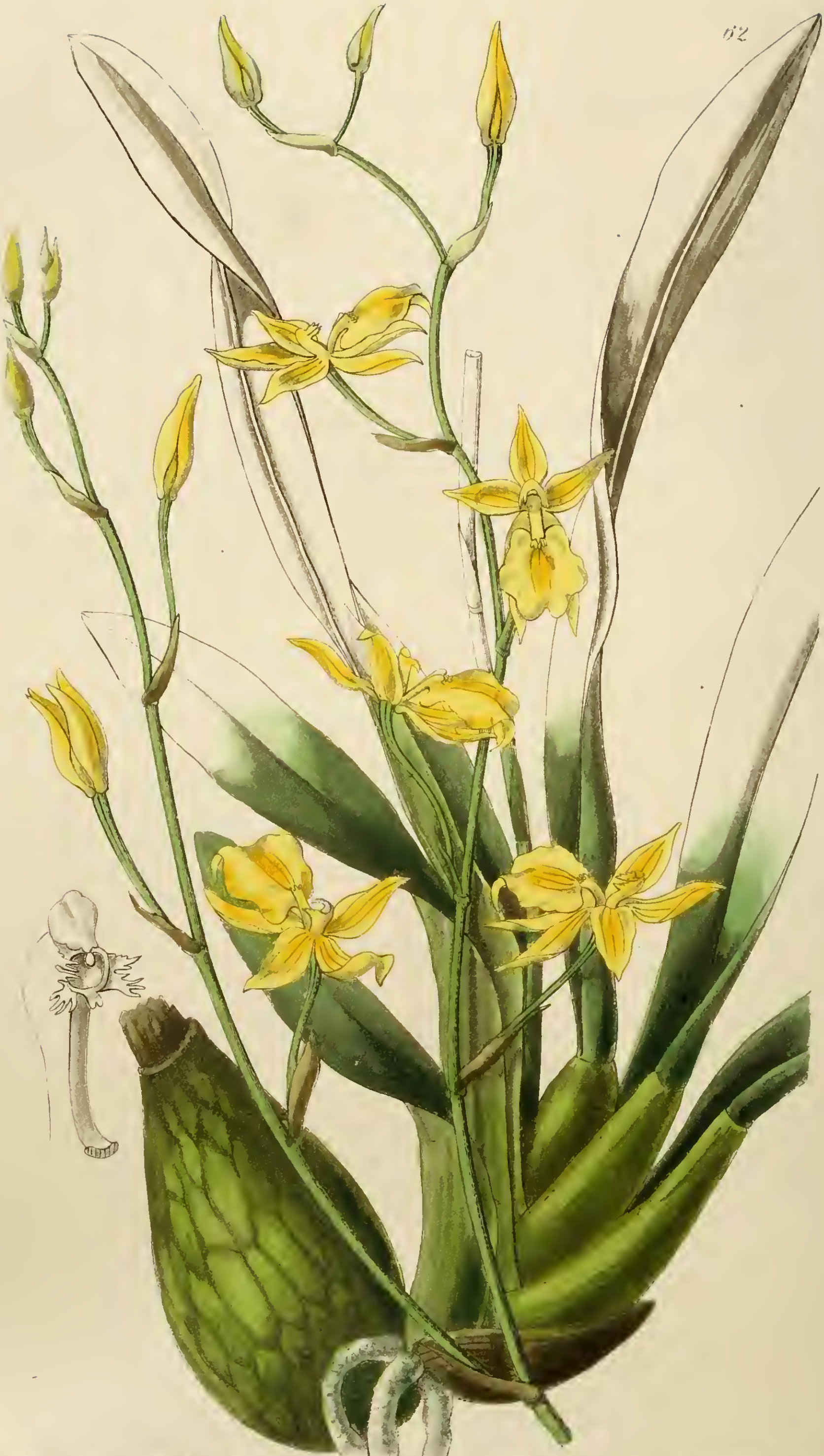


Miss Drake del.t Pub.d by J. Ridgway [illegible]

CYRTOCHĪLŪM mystacinūm.

Whiskered Curvelip.

GYNANDRIA *MONANDRIA.*

Nat. ord. ORCHIDACEÆ, § VANDEÆ.
CYRTOCHILUM. Botanical Register, vol. 19. *fol.* 1627.

Cyrtochilum *mystacinum;* pseudobulbis ovalibus compressis corrugatis monophyllis basi polyphyllis, foliis ligulatis acutis planiusculis carinatis scapo ramoso multò brevioribus, bracteis lanceolatis pedunculis duplò brevioribus, sepalis petalisque ovatis acuminatis, labello unguiculato cordato obovato-lanceolato subrepando plano apice reflexo medio pubescente basi obsoletè lamellato, columnæ alis multifidis. *Bot. Register,* 1838. *misc. no.* 38.

Pseudobulbi *ovales, corrugati, compressi, intra bases foliorum latentes vaginantium; ipsi monophylli.* Folia *ensiformia, carinata, acuta, avenia, erecta, scapo composito-racemoso multò breviora.* Bracteæ *acuminatæ, sphacelatæ, ferè naviculares, majores 6-7 lin. longæ.* Pedicelli *bracteis majoribus æquales, minoribus longiores.* Ovarium *pedicello suo multò brevius.* Flores *lutei, unicolores, distantes.* Sepala *linearia, acuminata; lateralibus labello suppositis.* Petala *conformia, sed latiora.* Labellum *unguiculatum, cordatum, obovatum, acumine recurvo; columnâ subparallelum eique basi adnatum; ungue calloso obsoletè lamellato apice dentato.* Columna *clavata; alis laceris, appendice ante stigma emarginato.*

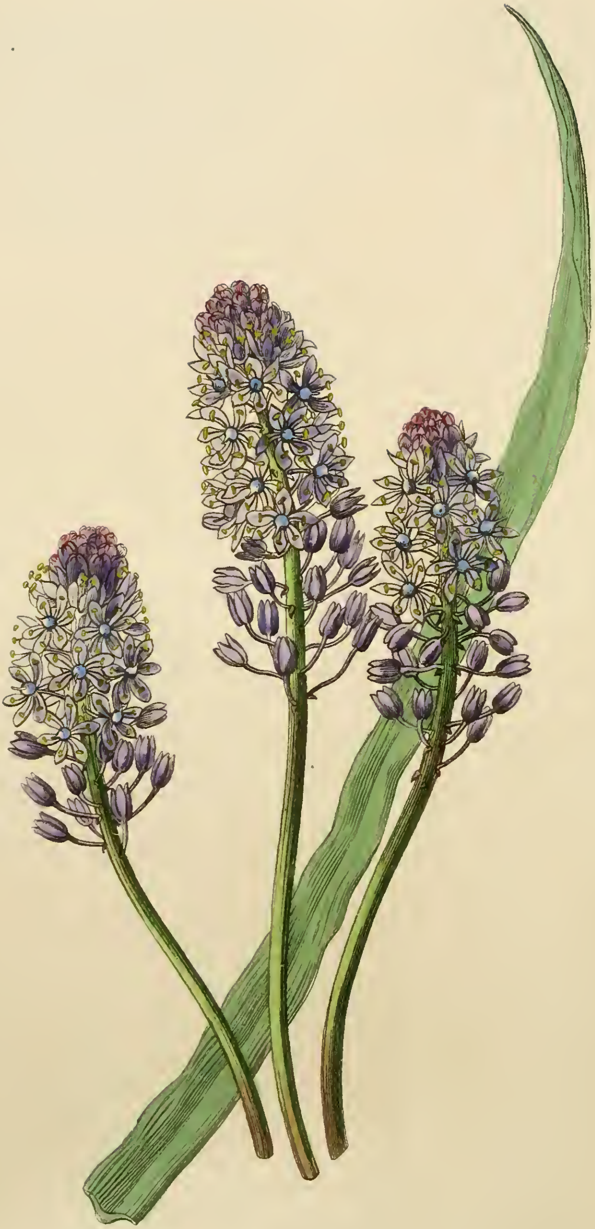
A notice of this rare plant has already been given in the volume of the present work for 1838, among the miscellaneous matter, no. 38; where by a misprint the flowers are described as being "bright yellow *white*-coloured," instead of "bright yellow *whole*-coloured."

It is a native of Peru, whence it was obtained by Richard Harrison, Esq. of Aighburgh, with whom it produced its flowers in the latter end of 1837. It is a genuine species of the genus, having the base of the lip united to the face of the lower part of the column, a circumstance overlooked in the separate figure of the column in the accompanying figure, which is otherwise correct.

This species will require to be cultivated in the moist stove, but will probably succeed best when the temperature is rather lower than it commonly is in this kind of house.

It should be potted in brown turfy peat well drained, and treated as other plants of this kind.

It is multiplied by division.



Miss Drake. delt. Pub.d by J. Ridgway 169 Piccadilly. Nov.r 1 1830 G. Barclay sc.

SCĪLLĂ pratēnsĭs.

Meadow Squill.

HEXANDRIA *MONOGYNIA.*

Nat. ord. LILIACEÆ.
SCILLA. Botanical Register, vol. 16. *fol.* 1355.

S. pratensis; foliis pluribus proteranthiis ensiformibus canaliculatis subundulatis scapo glabro longioribus, racemo elongato bracteolis minimis scariosis, pedunculis flore triplò longioribus, perianthii foliolis linearibus patulis staminibus longioribus.

S. pratensis. *Waldst. & Kitaib. plant. rar. Hung. vol.* 2. *p.* 207. *t.* 189. *Reichenb. fl. excurs.* 1. 106. *no.* 721.

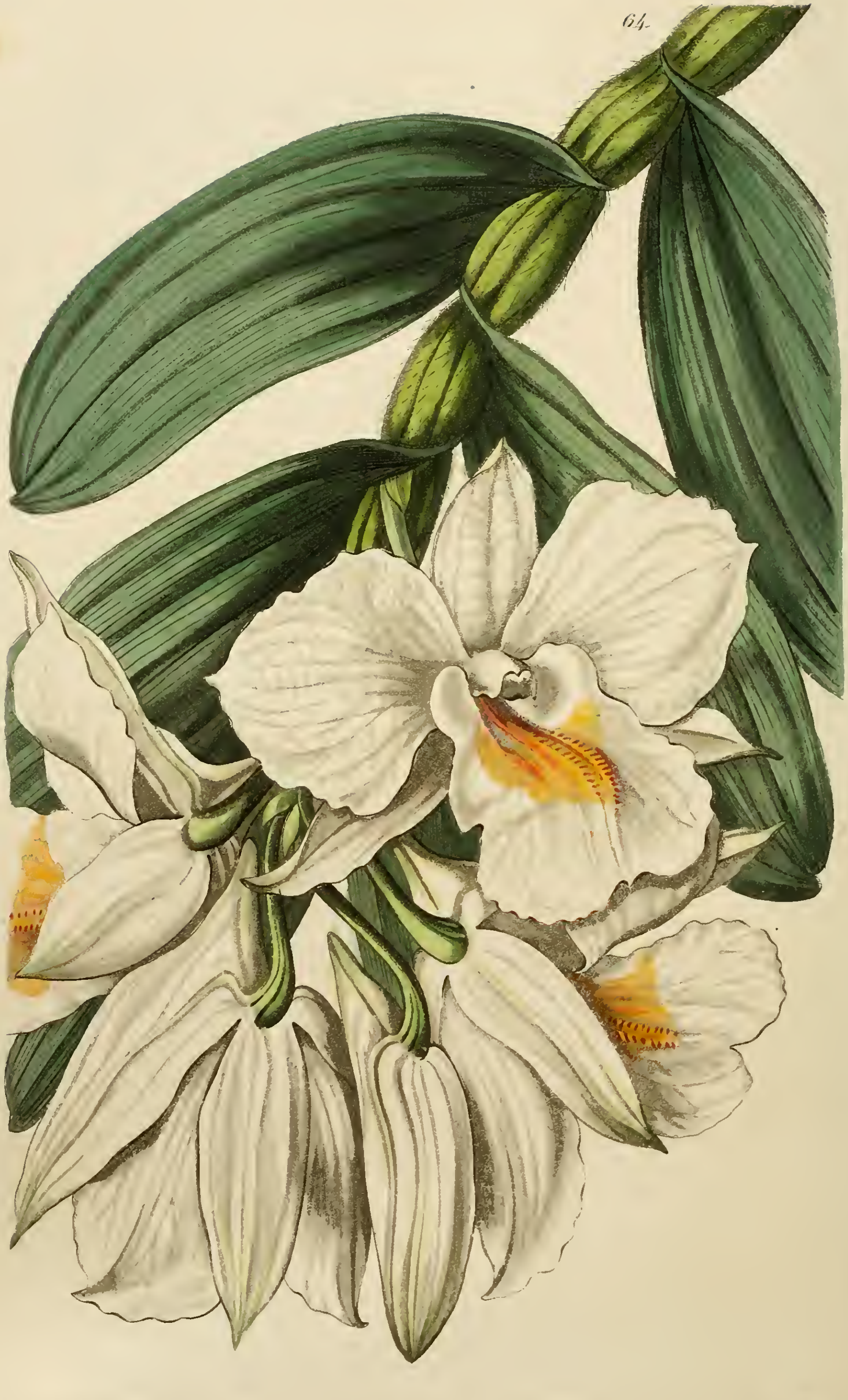
For specimens of this rare Squill I am indebted to the Honourable W. F. Strangways, in whose garden at Abbotsberry it flowers in June. It is a beautiful little rock plant, quite hardy, and a welcome addition to our gardens from flowering after the spring bulbs are gone, and before the autumnal species appear.

By those authors who have noticed the plant it has been compared with *Sc. italica*, but it is in reality much more closely allied to *Sc. autumnalis*, from which it differs in having evident bracts, a perfectly smooth not scabrous scape, and in its time of flowering.

It is a native of Croatia, in fields and meadows by the side of the river Korenicza, and especially near the village of that name, flowering in the beginning of June.

Like most plants with bulbous roots it requires a rich sandy soil to grow in, with plenty of moisture during the growing season, and to be either protected from wet during the time of rest or to be taken up after growing, but not before the leaves become *yellow;* as cutting the leaves off bulbous plants before the new bulbs are perfectly matured is very injurious, although a common practice, in order to prevent the unsightly appearance of Crocuses, Hyacinths, Squills, Ornithogalums, and all such early flowering plants, because they become shabby during the early part of summer.

64.



Miss Drake delt. Pubd. by J. Ridgway 169. Piccadilly Novr. 1. 1839. G. Barclay sc.

DENDRŌBĬŪM formōsūm.

Beautiful Tree-bloom.

GYNANDRIA *MONANDRIA.*

Nat. Ord. Orchidaceæ, § Malaxideæ.
DENDROBIUM. Botanical Register, vol. 7. *fol.* 548.

D. formosum; caulibus teretibus pendulis pilosis, foliis distichis ovatis apice obliquè emarginatis obtusis, racemo brevi terminali 4-5-floro, bracteis brevibus ovatis, (floribus maximis), sepalis oblongis acutis: lateralibus basi longè productis, petalis duplò latioribus acutis, labello obovato dilatato retuso cum basi columnæ in calcar obtusum connato. *Lindley in Wall. Pl. As. Rar. p.* 34. *t.* 39.
D. formosum. *Roxb. Fl. Ind.* iii. 485. *Wall. Cat. no.* 1998.

This magnificent species flowered at Chatsworth, in May 1838, and the drawing on the opposite page was then made from a specimen given me by his Grace the Duke of Devonshire. As a white flowered epiphyte, it is almost unrivalled among Asiatic Orchidaceæ, the *Phalænopsis amabilis* being the only one that can enter into comparison with it.

It has been already amply described by Drs. Roxburgh and Wallich; the former tells us he found it on trees in the forests of Sylhet, and in the Garrow mountains, flowering in April and May.

It was gathered by Dr. Wallich on the mountains of Nepal and Sylhet; also in the province of Martaban near Moulmein, and in Tavoy on the Tenasserim coast, flowering and fruiting in both the dry and rainy seasons. Mr. Griffith also met with it on trees in damp places in the neighbourhood of Moulmein; so that its range is unusually extensive for plants of this kind; it does not however appear to belong to the Flora of the Indian Archipelago. Dr. Wallich says it grows generally in large tufts upon trees, or sometimes on rocks ; the flowers possessing a delightful though faint perfume.

The best way to cultivate the plant, is to suspend it from the rafters of the stove. It should have plenty of good turfy peat to nourish its roots, and must be freely watered and syringed during its growing season. When that period is over, it should be kept dry and cool. This treatment will retain it in health and vigour, and make it flower freely.

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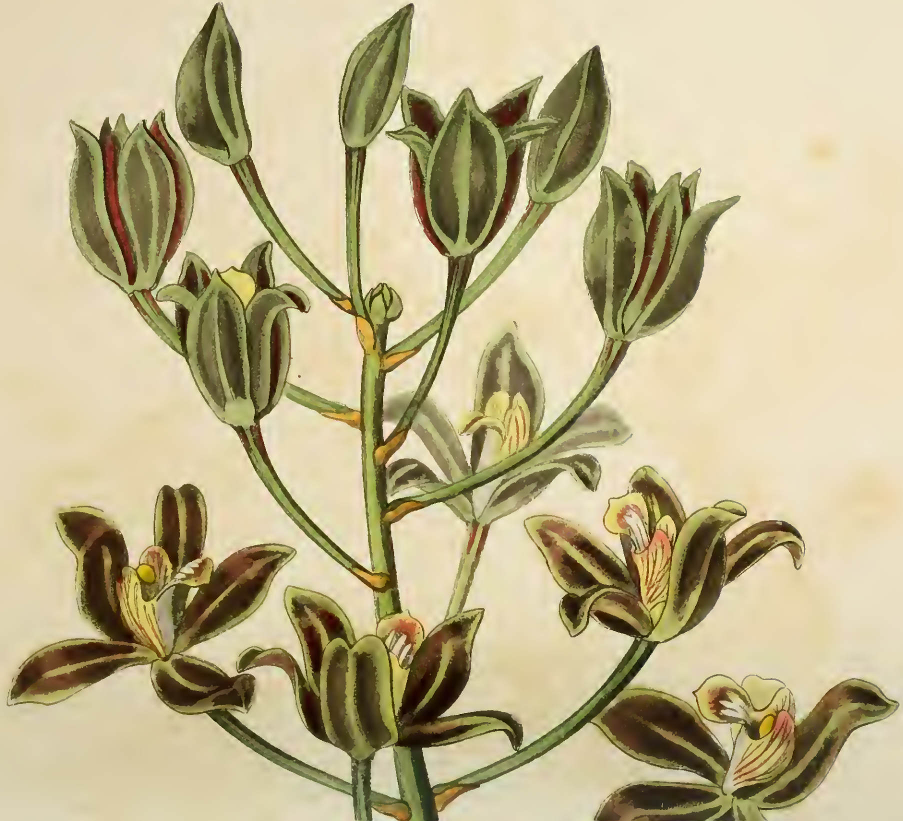

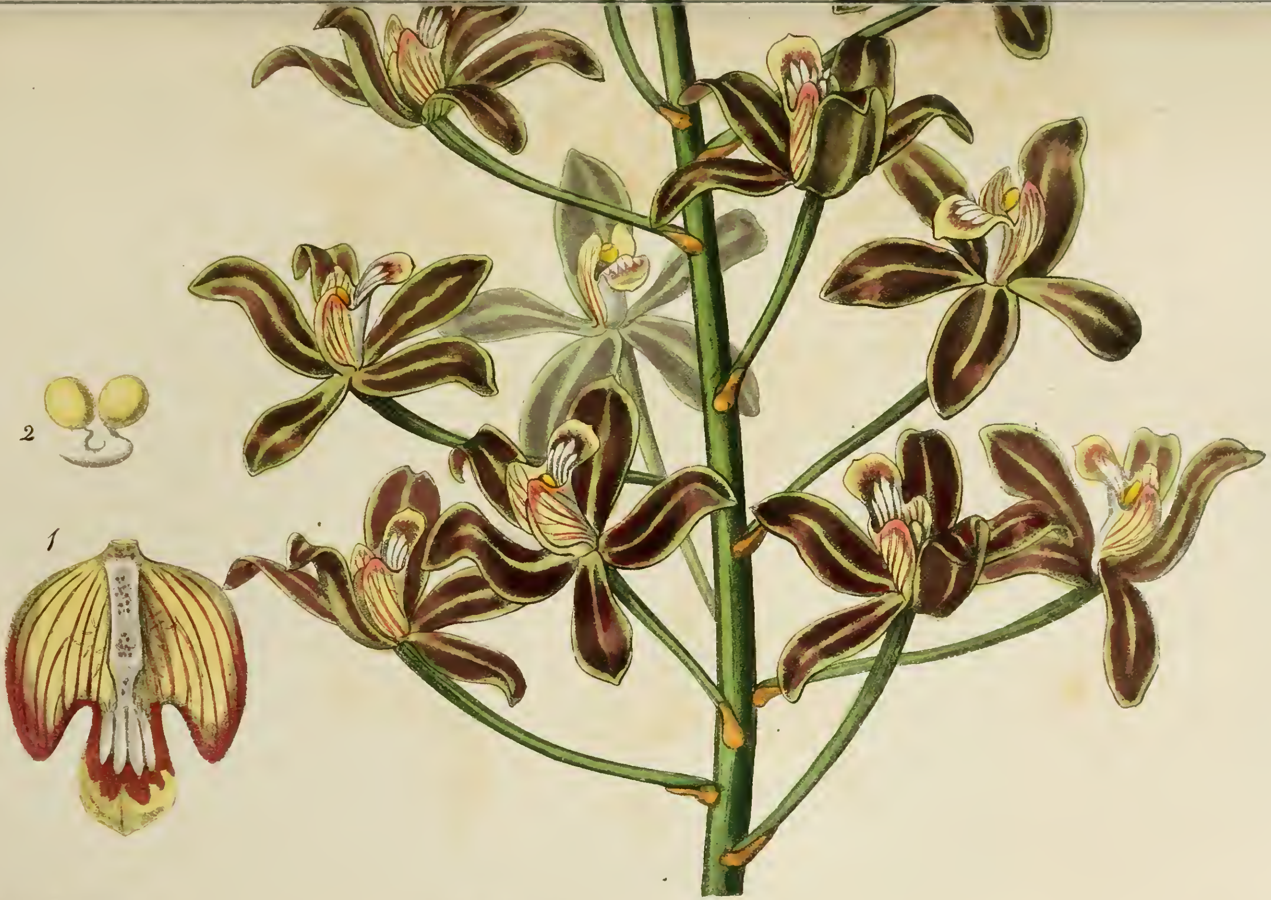

Miss Drake del.

Pub. by J Ridgway 169. Piccadilly. Decr 1839

G. Barclay sc

* GRAMMATOPHYLLUM multiflorum.

Many-flowered Letter-leaf.

GYNANDRIA *MONANDRIA.*

Nat. ord. ORCHIDACEÆ, § VANDEÆ.

GRAMMATOPHYLLUM *Blume; Perianthium* explanatum, patens, sepalis petalisque subæqualibus. *Labellum* cum columnâ articulatum, nanum, trilobum, cucullatum. *Columna* arcuata, erecta, semiteres, basi callosa. *Anthera* subbilocularis. *Pollinia* 2, globosa, basi sulcata, in extremitatibus glandulæ arcuatæ sessilia.——Herba *epiphyta, caulescens.* Caules *simplices, incrassati.* Folia *linearia, disticha, striata.* Pedunculi *radicales, longissimi, (v. terminales?) multiflori.* Flores *speciosissimi.* Gen. et Sp. Orch. p. 173.

G. *multiflorum;* racemo erecto longissimo multifloro, bracteis ovato-oblongis obtusis squamiformibus dorso convexis, sepalis oblongis obtusiusculis planis, petalis acutis subconformibus angustioribus, labelli trilobi pubescentis medio hirsuti lobo intermedio plano oblongo rotundato lateralibus erectis subfalcatis, jugo in medio carnoso elevato ad basin lobi intermedii interrupto in lamellas 4 simplices cis apicem evanescentes producto, columnæ margine supra basin elevato flexuoso incurvo foveam altam obconicam circumdante. *Botanical Register,* 1835, *misc. no.* 80.

For this noble Orchidaceous plant now figured we are indebted to the exertions of Mr. Hugh Cuming, who discovered it in Manilla, and sent it to his customers in England. I am not aware of its having flowered anywhere except with Mr. Bateman, who sent me in May, 1838, the specimen, of which the annexed plate represents the upper part; the whole raceme was upwards of two feet long, and bore forty-eight flowers, each about an inch and half in diameter.

The plant has very much the aspect of a gigantic *Cymbidium,* with long coriaceous leaves, distichous at the base, and in fact there is not much to separate Grammatophyllum from that genus; the principal mark of distinction yet remarked consists in the gland of the pollen-masses, which in Cymbidium is triangular, and in the present genus is crescent-shaped, with one pollen-mass on each extremity of the crescent. I observe however that the base of the column is rolled up so as to form a fistular cavity, or cuniculus, near the base of the labellum; but I am uncertain whether to regard this as a generic character or not.

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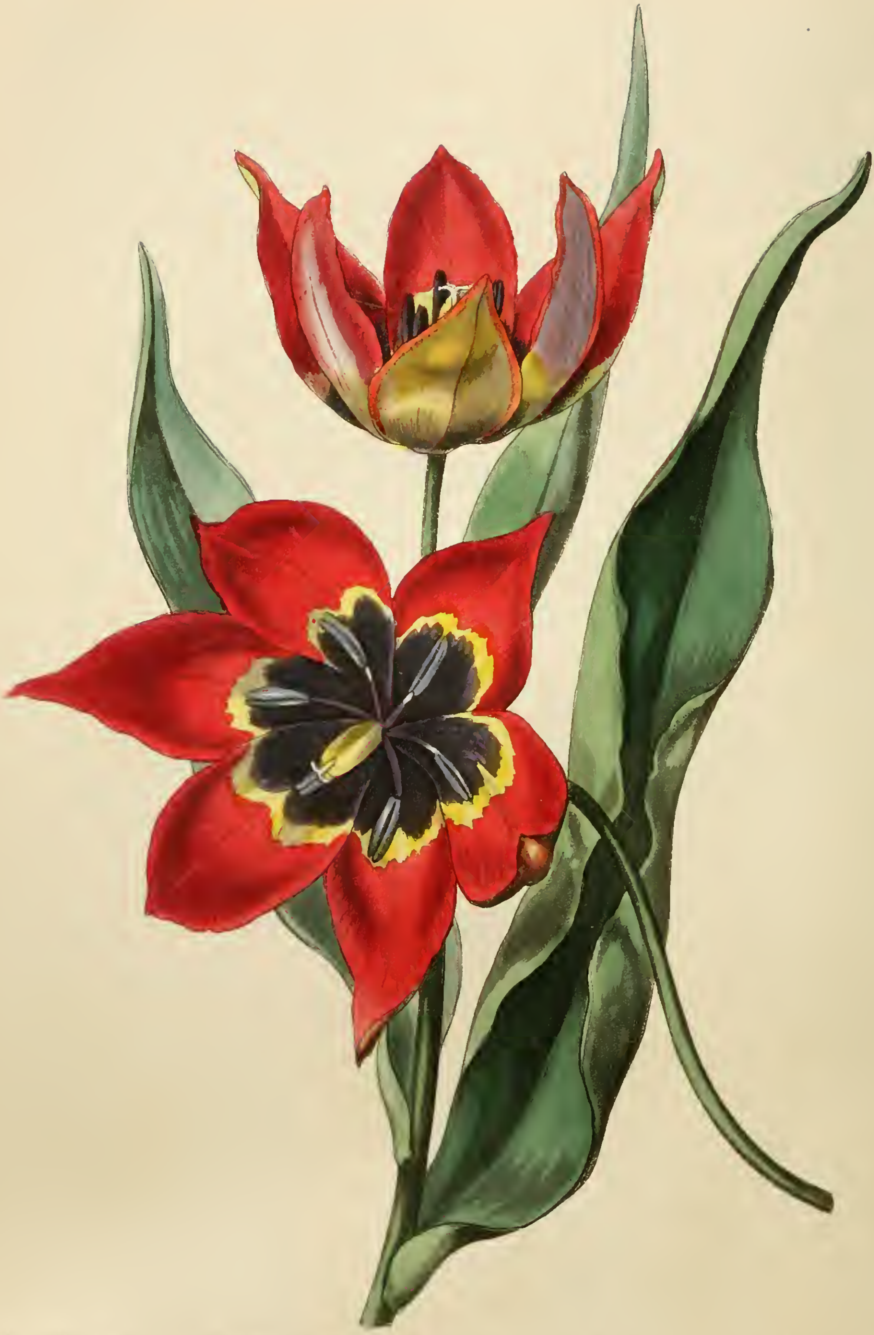
* From γραμμα a letter, and φυλλον a leaf, in allusion to the marking of the leaves of the flower.

It was hoped, when this plant was imported, that it would prove the famous Letter-plant of Amboyna, Java, and the neighbouring coast, so called because its flowers are marked with deep brown stains arranged upon a pale ground so as to resemble grotesque characters. In this however we have been disappointed, as, notwithstanding the noble appearance of this, it is very inferior to the Letter-plant. Of that I have before me a single flower from Dr. Wallich's Herbarium, gathered at Pulo Dinding, in Cochin China, by Mr. Finlayson, which must have been four inches from the tip of one sepal to that of the opposite petal, or a foot in circumference!

As the species is in this natural order among the easiest to cultivate, it is well worth possession, even in a small collection, notwithstanding that the flowers want richness of colour: it is probable however that they will improve in this respect.

66



Miss Drake del. Pub.d by J. Ridgway 169 Piccadilly Dec.r 1 1839. G. Barclay sc.

TŬLĬPĂ malĕŏlēns.

Strong-smelling Tulip.

HEXANDRIA *MONOGYNIA.*

Nat. ord. LILIACEÆ.
TULIPA, *Botanical Register, Vol.* 14. *fol.* 1143.

T. *maleolens;* caule foliis breviore glabro, foliis lanceolatis canaliculatis margine undulatis ciliatis, petalis exterioribus longioribus ovatis v. ovato-oblongis acuminatis, interioribus oblongo-ellipticis obtusis; maculâ baseos latè rhomboideâ emarginatâ. *Bertoloni* in litt. et *Reboul nonnull. sp. tulip. not. p.* 9, *et Appendix* sec. *Römer et Schultes Syst. veg.* vii. 376.

For this rare tulip I am obliged to the Hon. W. F. Strangways, who communicated specimens from Abbotsbury, in May, 1838.

According to Bertoloni the leaves are lanceolate, taper-pointed, regularly wavy and glaucous. The flower is red, deeper than in *Oculus solis* and *præcox;* in the inside crimson red and shining, on the outside pale red. When in flower it exhales an unpleasant but weak smell. The spot at the bottom of the petals is short, truncated at the apex and emarginate, purplish with a yellow border, larger on the sepals than on the petals. The filaments are deep purple, and at the very tip light green.

Mr. Strangways considers this plant to be "only a variety of T. Oculus solis; it is the smallest and most delicate; the bulb *woolly* as in the others. It is remarkable for its dark, rather than bright, cherry-coloured petals, with a pale straw-coloured border surrounding the dark eye which that tribe of Tulips has; this eye is of a dark greyish purple, and its pale edge is broader and generally more defined than in the other cognate Tulips. It approaches more nearly to the Tulip of the Euphrates (which I cultivate near it) than any other Italian Tulip does. A double variety is said to be in the Florentine gardens.

"It is found near Florence in the fields and vineyards under S. Miniato; and at a greater distance and in quantity at S. Margherita. It is the latest flowering Tulip of its class.

"The leaves are glaucous, more or less waved, sometimes much so. Its bad scent is not always present."

Mr. Strangways adds, that "the Aleppo Tulip is distinct from that of the Euphrates; and proves to be precisely the Italian Oculus solis v. Raddiana, which seems the most generally dispersed type of O. solis."

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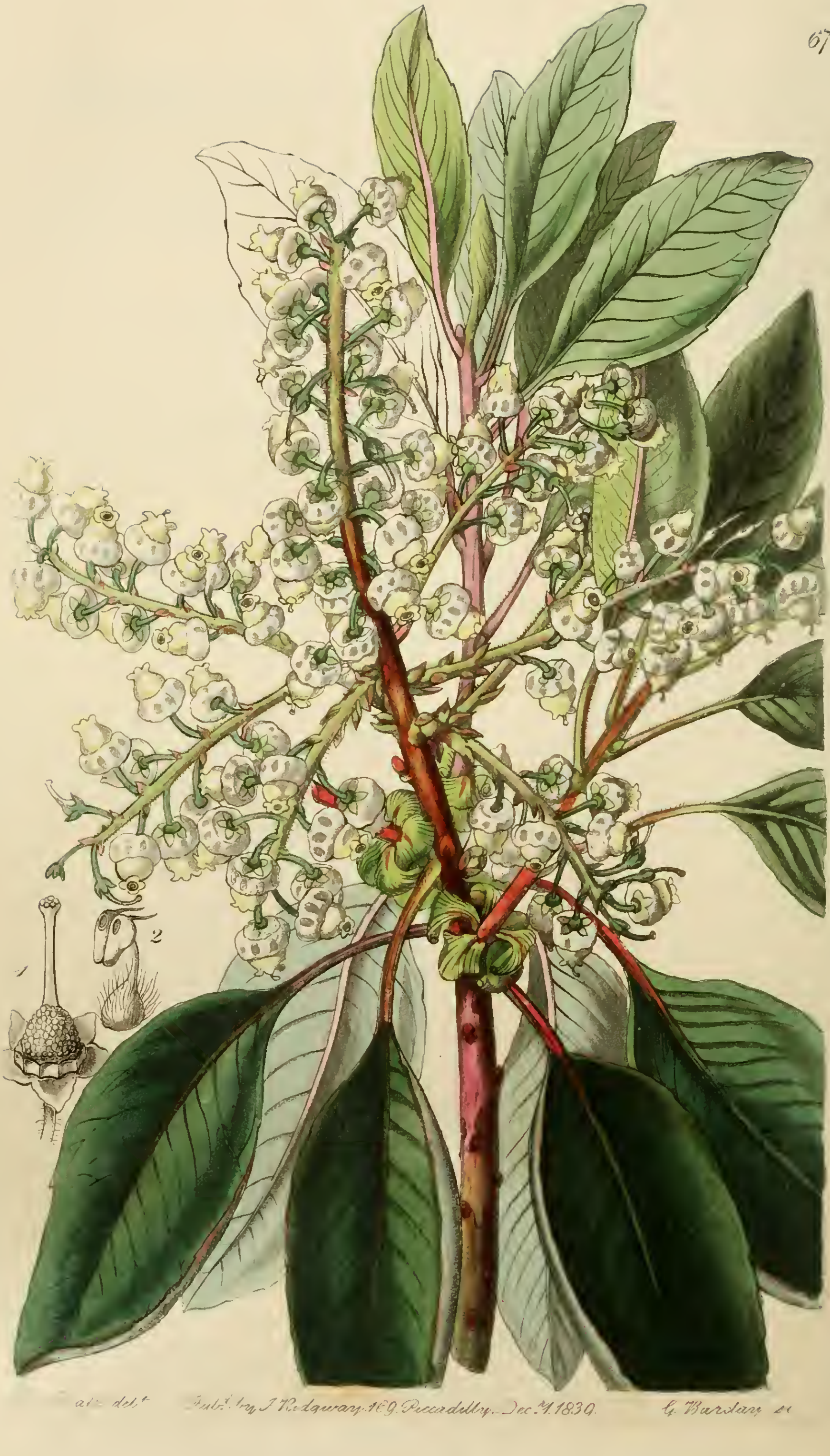

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* ĀRBŬTŬS laurifŏlĭă.

Laurel-leaved Strawberry tree.

DECANDRIA *MONOGYNIA.*

Nat Ord. Ericaceæ,
ARBUTUS. *Botanical Register, vol.* ii. *fol.* 113.

A. *laurifolia;* foliis petiolatis oblongis obtusis glabris serrulatis, racemis compositis pilosis, bracteis infimis squamæformibus imbricatis, pedicellis glabriusculis, corollâ medio constrictâ dimidiâ inferiore corrugatâ membranaceâ.
A. laurifolia, *Linn. Suppl.* 238, fide Dom. Lambert.

This plant was introduced from Mexico by the last Lord Napier, and given to Mr. Lambert, who is of opinion that it is the true A. *laurifolia* of Linnæus' Supplement, a very obscure plant, said to inhabit North America, concerning which no one seems to have much information. Pursh supposed that it was from the North-west Coast, if so it must be the *A. Menziesii* of that Botanist, and the *A. procera* of this work, fol. 1753. Sir William Hooker concurs in the opinion that it was from the West Coast, because no true Arbutus has been seen on the east side of the Rocky mountains; but he distinguishes it from *A. Menziesii.*

For my own part it seems more likely that Linnæus should have seen some Mexican specimen, than that any north-west American should have come under his inspection, and if so, this is probably the plant he intended.

Be this as it may, the present species is certainly very distinct from A. Andrachne, although it also has a bark which peels off when old; the much less coriaceous and smaller leaves, and the very peculiar form of the corolla affording abundant marks of discrimination; the contraction round the middle of the corolla is so distinctly marked, that in some positions it looks as if the upper greenish firm conical end, were a separate organ from the white shrivelled base.

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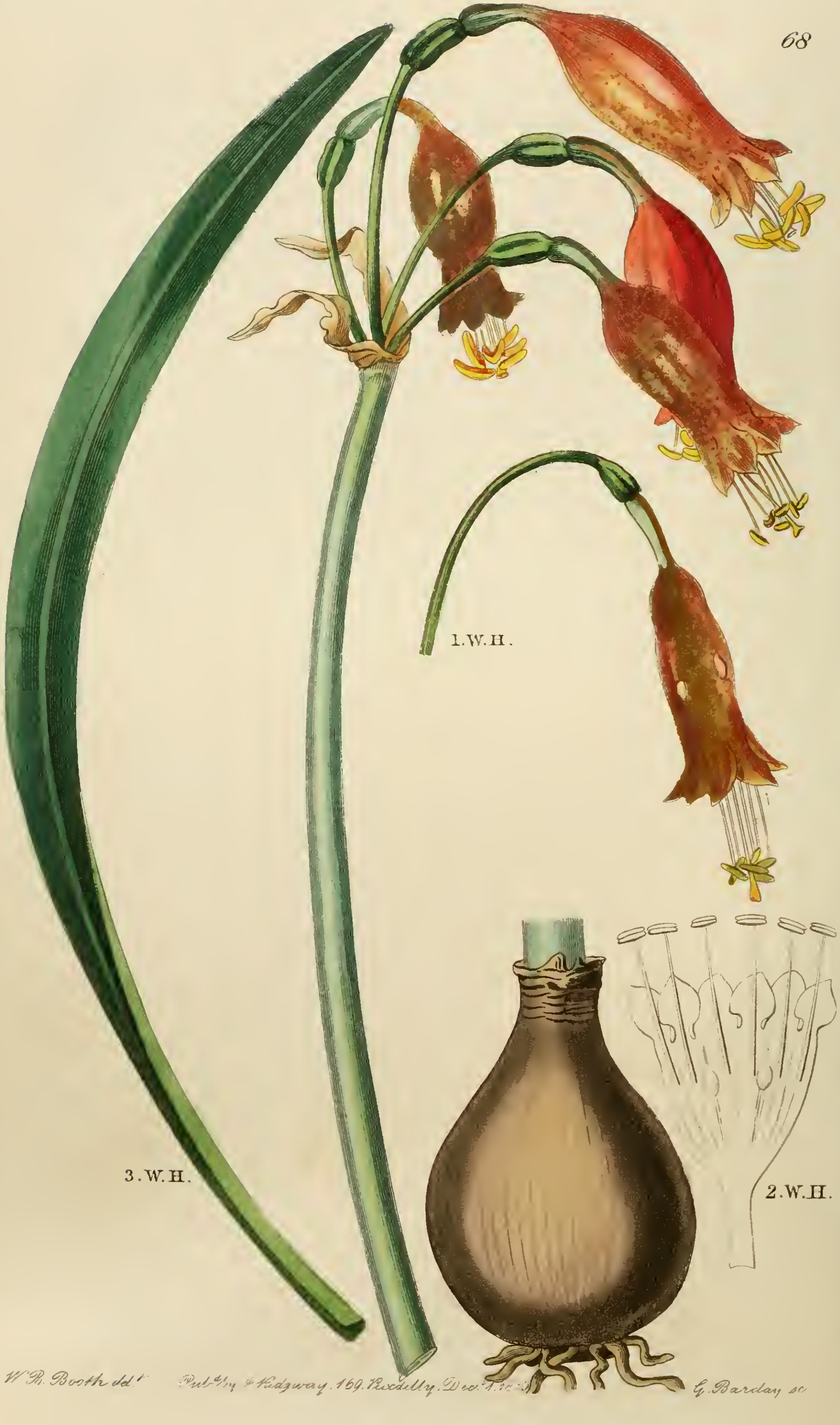
* See folio 1753.

From *A. Menziesii* itself, it is so much less different, that I had at one time thought they must be the same. It appears however, upon a more exact comparison, that while the whole raceme of A. Menziesii is covered with a fine delicate down which extends all over the pedicels, the latter in this species are nearly glabrous, and the remainder of the raceme coarsely downy. The lower bracts of A. Menziesii are spreading and foliaceous, of A. laurifolia scale-like, imbricated, and closely pressed to the branch. The leaves too of the former are much smaller and thinner than those of the latter.



W R. Booth del.t Pub.d by J. Ridgway. 169. Piccadilly. Dec.r 1. 18[illegible] G. Barclay sc

PENTLANDIA miniata, *var.* 2. Sulivanica.

Red-lead-coloured Pentlandia, Commodore Sulivan's variety.

HEXANDRIA *MONOGYNIA.*

Nat. ord. Amaryllidaceæ, § Oporanthiformes, *scapo solido, tubo non coronato, seminibus testaceis.*

PENTLANDIA. Herbert. Perianthium cernuum tubo infra subcylindrico tenui curvatulo superne ventricosè ovali limbo brevi reflexè semipatente regulari, filamenta recta subæqualia filiformia tubi regionis ventricosæ medio inseparabiliter inserta, stylus rectus tenuis stigmate incrassato, antheræ medio affixæ versatiles. *Plantæ Andinæ bulbo ovato superne angustato, foliis hysteranthiis margine in oriundo reflexè compresso seriùs explicato lanceolatè angusto-ovalibus petiolo crasso, germine curvatulo trigonè oblongo utrinque attenuato fronte declivi.* W. H.

P. *miniata;* umbellâ 4-6-florâ, folio attenuatè subacuto (unico?), scapo tereti subpedali glaucescente, spathâ bivalvi acutâ ebracteatâ, pedunculis 4-6 inæqualibus subsesquiuncialibus, perianthio subbiunciali miniato: tubi tertiâ parte tenui sordidâ, sepalis ovatis, petalis basi angustatis (pedunculato-cordatis) limbum circiter $\frac{5}{8}$ unciæ longum staminibus semunciam stylo $\frac{5}{8}$ unc. superantibus, polline aureo.

Var. 1. *Lacunosa;* tubo 6-costato angustiore mediâ parte constricto, lacunis sæpe externis intùs gibbosis subrotundis in spatiis interstamineis, foliis $\frac{11}{16}$ unciæ latis. Ex Quispicanchâ prope urbem Cusco Peruviæ. Fig. 1, 2, 3, W. H.

Var. *Sulivanica;* tubo latiore non constricto neque lacunoso; (colore saturatiore?) Ex Americæ meridionalis regione Occidentali loco incerto. W.H.

"The first variety of this bright-coloured plant was found at Quispicancha, near Cusco in Peru, and sent to Spofforth under the name of Red Narcissus by J. B. Pentland, Esq. H. B. M.'s consul-general, together with several other bulbs, (some of which are apparently of the same genus) and seeds, amongst which were those of the splendid Erythrina, called Pisonai by the natives. The genus Pentlandia is named in compliment to his exertions to introduce the vegetable productions of Peru into this country. Figs. 1, 2, 3, W. H. represent a flower, the internal view of the same, and the leaf

of an offset of var. 1; the full grown leaf, usually, if not always, solitary, would have been too long for the plate; its width is 11-16ths of an inch. It is distinguished from v. 2. by a slenderer tube, constricted towards the lower extremity of the ventricose part, and by remarkable round pits, which appear in the inside like knobs, mostly two to each flower in the spaces between the insertion of the filaments. V. 2. was sketched and described by Mr. Booth, the intelligent gardener of Sir C. Lemon, from a specimen sent to him by Mrs. Sulivan from Flushing, near Falmouth, with another from Miss Warren of the same place, as the produce of bulbs procured by Commodore Sulivan during his command on the W. coast of S. America in 1837. Both varieties flowered in August, 1839; v. 2. with four, v. 1. with six flowers, not long after the decay of the leaf. A second bulb of v. 1. shewed flower towards the end of September. The scape was about a foot high; the circumference of the tube of v. 2. measured an inch and half. The anthers are oblong, and attached near the middle. The narrow part of the tube is of a dirty colour, between green and red; the rest of the flower of v. 1. is precisely of the colour of red lead, of v. 2. according to Mr. Booth's drawing, darker. When the sketch of Stenomesson croceum, Bot. Mag. 3615, was shewn to me, I was asked whether it was not Pancratium coccineum of Ruiz, and I answered that its form agreed better with Dombey's croceum, understanding from the question that the flower had been ascertained to have the cup of Pancratiform plants, and thinking that I saw a six-toothed cup in the figure. Since the discovery of an allied genus without cup, on examining the figure, I believe the artist did not mean to represent any cup, but merely six ribs to the limb with oblique margins, and I suspect that the plant was P. miniata, if so, very incorrectly sketched. The section with solid scape, shelly seeds, and tube without a cup, slides into the cup-bearing Pancratiform section by the affinity of Pentlandia to Urceolina and Stenomesson, and of Oporanthus to Chlidanthus and Clinanthus, (a name for which I propose to substitute Clitanthes) the three latter with linear, the three former with petiolated leaves, marginally compressed backwards*

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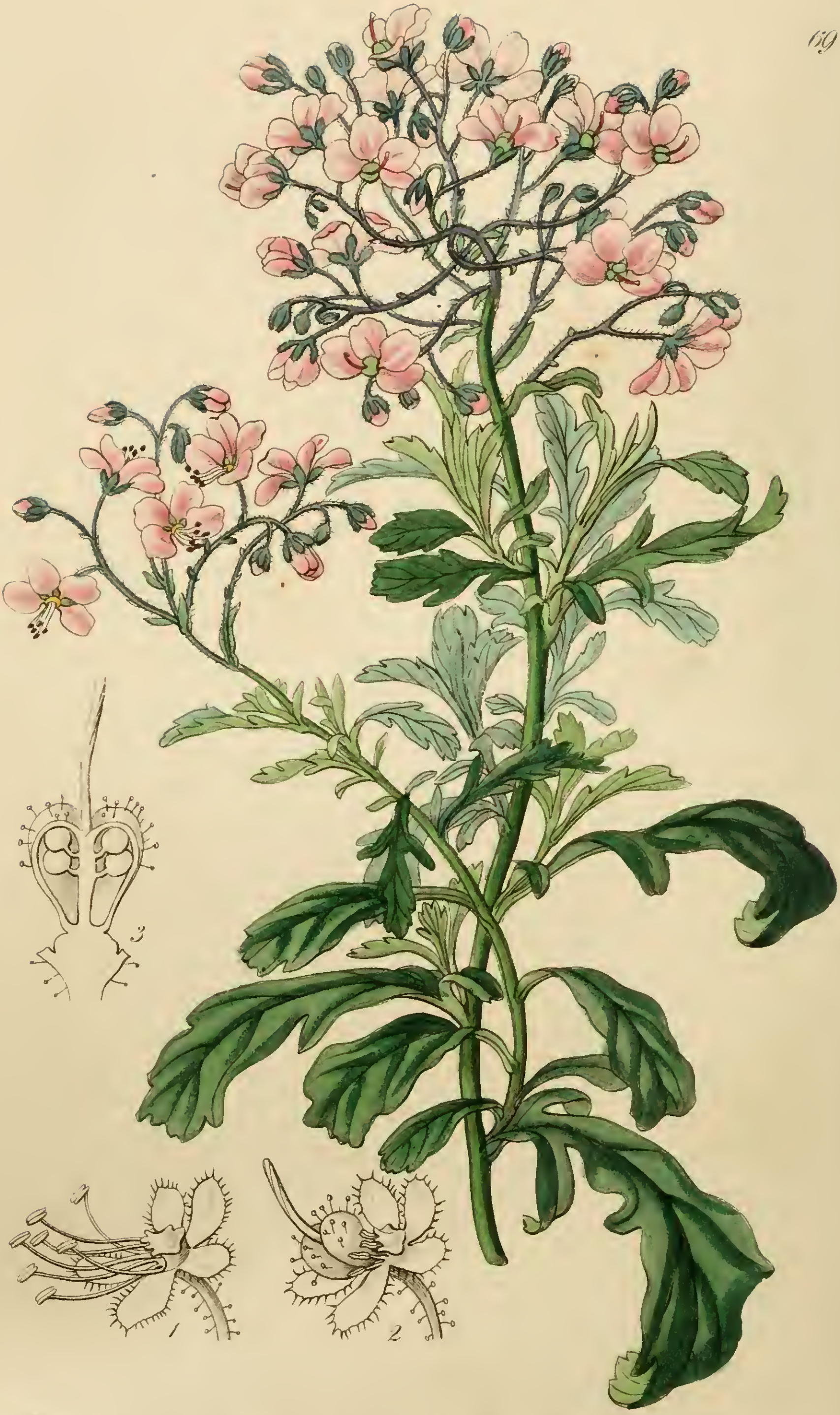
* The leaves of Griffinia are compressed forwards.



Miss Drake del. Pub by J. Ridgway 169 Piccadilly Dec 1 1836 by Barclay.

* DIPLOPĒLTĬS Hugēlĭi.

Baron Hugel's Diplopeltis.

POLYGAMIA *MONŒCIA.*

Nat. ord. SAPINDACEÆ.

DIPLOPELTIS. *Flores* polygamo-monœci. *Sepala* 5, æstivatione imbricata. *Petala* 4, versus latus superius floris flexa, æstivatione imbricata. *Discus* dimidiatus, posticus, carnosus, truncatus, denticulatus, declivis. *Stamina* sæpius 8, hypogyna, ascendentia, in floribus fœmineis sterilia nana. *Ovarium* superum, 2-3-loculare, inflatum; ovula cuique loculo duo, funiculis propriis elongatis ascendentia; stylus tortilis, simplex. (*Capsula* 3-locularis, 3-partibilis, loculis monospermis; semina e funiculo longiusculo in arillum minimum expanso erecta. *Embryo* exalbuminosus, curvatus: cotyledones spiraliter convolutæ, *Endl.*)

D. *Hugelii;* cinerea, pilosa, ramis teretibus, foliis cuneatis obtusis grossè dentatis basi nunc pinnatifidis, paniculâ terminali glandulosâ, capsulâ obcordatâ cincreâ glandulosâ apterâ.

A short notice of this very pretty plant has already been given at No. 70 of the miscellaneous matter of the present volume. For its introduction we are indebted to Mr. Andrew Toward, gardener to H. R. H. the Duchess of Gloucester; who obtained its seeds from the Swan River, where, according to Baron Hugel, it is found about the town of Freemantle; it had been previously raised at Vienna in that noble traveller's garden.

It proves to be a hardy greenhouse shrub, growing about 3 feet high, and flowering in April and May. It requires the same treatment as such Cape plants as Hebenstreitias, striking freely from cuttings of the young wood, and will bear to be planted out in the open border in summer.

What gives this plant a very great interest, quite independent of its pretty appearance, is the difficulty of determining in a satisfactory manner its natural affinities. It is one of those anomalous forms which stand intermediate as it were between more distinctly marked forms of structure, connecting them with each other, but not very obviously corresponding with any.

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* From διπλος double, and *πελτη* a buckler; but the application of the name does not occur to me.

It was originally supposed to be a Rutaceous plant, and the twisted style, the definite numbers among the several floral envelopes, and the few seeded ovary favoured this supposition ; but when it was more exactly examined, the indehiscent fruit, unsymmetrical flowers, curved embryo, great hypogynous disk at the back of the stamens, and undotted leaves, were opposed to the opinion of its forming part of that order.

Upon the publication of his Enumeration of Baron Hugel's plants, Dr. Endlicher stationed the genus among Sapindaceæ, led to that conclusion it is to be presumed, by its unsymmetrical polygamous flowers, large disk, frequently 3-celled ovary, as also by the structure of the embryo, and the trace of an arillus found upon the seed. Its habits, however, correspond so ill with Sapindaceæ, that nothing but a very exact examination of characters would have led to its being stationed in that order.

In the place above quoted, I suggested that it would prove to be an anomalous form of Capparidaceæ ; my reasons for which were, that it has altogether the habit of a Cleome, that its stipitate ovary, glandular hairs, declinate stamens, and especially its large dimidiate disk, are all in accordance with that order, with which the seeds do not materially disagree in structure. The objections however, to a reference of Diplopeltis to Capparidaceæ, namely, the discrepancy between the number of the sepals and petals, and the plurilocular ovary are great; the latter in particular, in our present ignorance of the true value of characters, forms an obstacle to which the mere habit of a plant and circumstances of external structure are not equivalent.

Upon the whole then I would agree to referring Diplopeltis to Sapindaceæ, because it is more like that order than any thing else, but being stationed there it must be regarded as an outlying genus, tending to connect the order very closely with Capparidaceæ.

Fig. 1 is a male flower, deprived of its petals ; 2 is a female in the same state ; 3. is a vertical section of the ovary.

before their full developement. Pentlandia has no connecting membrane, and the filaments, when pulled, snap off at the point of insertion. Urceolina has a membrane adhering to the tube, but partible, and its edge discernible between the filaments; Stenomesson a free and dentate cup. Pentlandia and Stenomesson in habit and foliage are closely akin; Urceolina flowers from between the leaves. Oporanthus (of which I have a two-flowered scape with two ripe capsules) has a naked tube, Chlidanthus a connecting irregularly dentate membrane adhering to the tube, but partible; Clitanthes a cup as perfect as that of Stenomesson. Urceolina and Chlidanthus, in which the cup is not manifest, but adhesive and imperfect or rather rudimentary, are therefore points from which the two sections diverge. The only known genera of this section are Pentlandia, Oporanthus, Sternebergia, and Gethyllis. Carpodetes has no immediate connexion with Stenomesson, with which Mr. Ker wished to unite it, but if it could merge in any other genus, that would be Coburghia, which in that case, having the priority, it would rather supersede."

For the whole of this article I have to express my obligations to the Honourable and Rev. William Herbert.

MISCELLANEOUS NOTICES.

⁂ The Botanical memoranda published in the last volume of this work under the above title, have enabled me to bring before the public no fewer than 183 plants, the greater part of which are new, in addition to the 68 of which figures were published; so that no fewer than 251 plants have been the subject of illustration during a single year. I have reason to believe that this arrangement has proved advantageous to the purchasers of the Botanical Register, since it has been the means of informing them what the real character is of the new plants whose names are found in sale catalogues, and of enabling them to judge how far they may be deserving of being purchased.

The experiment having thus far succeeded, it is now proposed to commence what I hope will be found an improvement upon the plan, by adding to the notices of plants a short account of such *new books* or *new discoveries*, &c. in Horticulture and Botany, as are of sufficient importance or interest to deserve to be recorded. In order to gain space for this addition, a little alteration in the typographical arrangements has been found necessary.

1. PLEUROTHĀLLĬS *pectinātă;* folio oblongo acuto cochleato glauco caule ancipiti breviore, spicâ simplici distichâ in folium pronâ eoque breviore, bracteis membranaceis cucullatis ovarii longitudine, sepalis pubescentibus elongatis intermedio lineari lateralibus latioribus basi ventricosis approximatis omninò liberis, petalis lineari-lanceolatis, labello unguiculato oblongo basi pectinato apice truncato denticulato.

A curious species, resembling P. prolifera in habit. It was obtained from Rio Janeiro by Messrs. Loddiges. The flowers are sea green, with a few deep purple spots at the base of the labellum. The leaf is so firm, and so much hollowed out, that it is capable of holding water, as if it were made of metal.

2. MAXILLĀRĬĂ *foveātă ;* foliis lanceolatis undulatis plicatis racemo triplò longioribus, bracteis linearibus sphacelatis ovario longioribus, sepalis petalisque lineari-oblongis obtusiusculis, labello postico oblongo apice trilobo: laciniâ mediâ rotundatâ carnosâ excavatâ, disco ter aut quinquies sulcato.

A new species from Demerara, for which I am obliged to Messrs. Loddiges. It is very near M. squalens, but has a different lip, and its flowers are of a pale uniform dull straw colour. They have a faint, and not unpleasant, smell.

3. PLEUROTHĂLLĬS *strupifŏlĭă ;* folio longissimo coriaceo obtuso lorato plano, racemis brevibus fasciculatis pendulis, floribus hiantibus pubescentibus, sepalo intermedio oblongo apice carnoso revoluto lateralibus semiconnatis majoribus porrectis intùs maculis pilosis (!) notatis, petalis rhombeo-linearibus acutis, labello oblongo obtuso concavo nudo.

This is the most remarkable species of the genus I have yet seen. Its leaves are like leather thongs, and full eighteen inches long. The flowers are dull purple and white, with patches of short deep purple hairs on the inside of the lower sepals. It was imported from Rio by Messrs. Loddiges.

4. LǢLĬĂ *ālbĭdă ;* pseudo-bulbis ovalibus diphyllis, foliis linearibus acutis spicâ multiflorâ 4-plò brevioribus, sepalis oblongo-lanceolatis acutis vel subacuminatis petalisque latioribus acutis, omnibus apicibus reflexis fortiter mucronulatis; labelli alte trilobi, tricostati lobis lateralibus erectis rotundatis intermedio duplo majore subrotundo obscure apiculato reflexo. *Bateman in litt.*

"A native of the environs of Oaxaca, whence it was sent to me this spring by the Messrs. Sadler of that place. Its colour is quite a novelty in the genus, all the other species bearing rose-coloured or lilac flowers. It has the graceful appearance of L. autumnalis, from which it can scarcely be distinguished in habit. Its flowers are very different in their form (as well as colour) from all the other species; they are about two inches across, sweet-scented, and excepting a bright yellow streak down the centre of the lip, and a few crimson dots at its base, are of a uniform semi-transparent white. It appears to be of easy cultivation, and the most free flowering individual of the genus." The foregoing memorandum has been communicated to me by Mr. Bateman. I have also received the plant from Mr. Harris. It will be figured hereafter in this work.

5. BOLBOPHY̆LLŪM *fūscūm;* pseudobulbis oblongis obtusè tetragonis diphyllis, foliis lineari-oblongis patentibus emarginatis, spicâ pedunculatâ distichâ ancipiti glabrâ pendulâ, bracteis ovatis cucullatis acutis coloratis distantibus florum longitudine sepalis triangularibus acutis, labello trilobo carnoso laciniâ intermediâ convexâ rotundatâ lateralibus brevioribus magis membranaceis acutis serrulatis.

Nearly related to B. tetragonum, like which species it is a native of Sierra Leone. The flowers are a deep dull chocolate colour, and are chiefly remarkable for the beauty of their anatomical structure. Like Liparis pendula they are studded with large transparent cells, containing raphides in cubical parcels, and they are moreover filled with short spiral vessels, so closely filled with air that it is difficult to drive it out even with the aid of the air-pump. Imported by Messrs. Loddiges.

6. QUEKĒTTĬĂ *microscŏpĭcă.* A very singular little plant, with the habit of a Pleurothallis, and the pollen-masses of a Vandeous Orchidacea; more nearly allied to Rodriguezia than to any thing else, but quite different in habit, and essentially distinguished by its cylindrical perianth, and labellum not only parallel with the auriculate column throughout its whole length, but excavated at the base, and furnished there with two callosities like those of Spiranthes. Its leaves are terete, subulate, about three inches long, and beautifully mottled with light green, deep green, and purple.

Although this little plant is only a few inches high, and has no attractions for the vulgar eye, it is in some respects one of the most interesting I know, if examined microscopically. Nothing can be more beautiful than the fabric of the leaves below the epidermis, and it undoubtedly deserves more examination in this respect than I am at present able to give it. The flowers abound in raphides, clustered in cells larger than those which surround them, and of a different colour, so that the flower, when examined with low powers of the microscope, looks as if it were dotted. I have observed this already in Liparis pendula (*Bot. Reg.* 1838, *misc. no.* 128.), and in Bolbophyllum fuscum, and it will probably be found a common structure in the sepals and petals of Orchidaceæ, as we already know it is in their leaves and stems. The caudicula is excellently adapted to shew the cellular nature of that part, and to explain upon what plan it is formed in other cases.

QUEKETTIA (§ Vandeæ). Perianthium cylindraceum, sepalis linearibus æqualibus basi gibbosis lateralibus connatis, petalis linearibus æquilongis. Labellum oblongum, integrum, muticum, cum labello parallelum, basi excavatum bicallosum. Columna semiteres, erecta, apice utrinque auriculata. Anthera unilocularis. Pollinia 2, posticè excavata; caudiculâ lineari, glandulâ minutâ.——Folia teretia maculosa. Panicula capillaris, 3-pollicaris. Flores parvi, flavi. Sepala linearia obtusa et labellum oblongum acutum cellularum majorum lutearum in medio raphidophorarum copiâ repleta. Columna linearis, petalorum ferè longitudine, auriculis acutis inflexis.

It gives me great pleasure to name this curious plant after Edwin J. Quekett, Esq. F.L.S. an excellent Botanical observer, and one of our most skilful vegetable anatomists. I am already indebted to that gentleman for some valuable facts concerning raphides; a plant, therefore, in which these crystals form a conspicuous part of the structure, may not be inappropriately selected to bear his name.

7. CYCLŌSĬĂ *maculātă*, (Klotzsch in Allgem. Gartenzeitung, no. 39. 1838.) a supposed new Mexican Orchidaceous plant, appears to be Mormodes pardina *Bateman in Bot. Reg.* 1838. *misc. no.* 176.

GRUNDZÜGE, &c.—*A new theory of Vegetable Fertilization*, by Stephen Endlicher. A pamphlet, Vienna, 1838.

In consequence of the great resemblance between the pollen of perfect plants, and the spores (or seeds) of cryptogamic plants, an opinion has arisen in Germany that the pollen does not possess any specific fertilizing influence, as has hitherto been believed, but that it is the seed of a plant in its youngest condition, and that it strikes into the stigma its roots, the tips of which eventually reach the ovule, and there complete their evolution. Schleiden and Wydler have already published their ideas upon this subject, and Mr. Endlicher declares himself an advocate of the same views. In the papers of the former physiologists, the supposed fertilizing influence of the pollen was disposed of; but no attempt was made to shew in what the said influence resides, if not in the pollen. Mr. Endlicher supplies this omission by assigning that function to the papillæ of the stigma.

A Flora of North America; arranged according to the Natural System, by John Torrey and Asa Gray. Vol. 1. part 1. New York, July 1838.

The poor compilation by Pursh, and the meagre Flora Boreali-Americana of Michaux, are the only general works yet published upon the Flora of that vast part of the North American continent which lies north of Mexico; and neither of these works was written by an American. Most extensive materials for giving a good account of those varied regions have been accumulating for many years; several excellent local Floras have been published in the United States, Sir Wm. Hooker's valuable work, the Flora Boreali-Americana, is a mine of information concerning the species inhabiting the British possessions, and the journeys of Douglas, Drummond, Nuttall, Coulter, and others, have produced a very considerable amount of information, of which little is yet published, concerning the Southern and once Spanish territories. It is the purpose of Drs. Torrey and Gray to consolidate these materials into three closely-printed octavo volumes, of about 550 pages each; and, to judge from the previous writings of these eminent Botanists, and from the present work, the task could not have been undertaken by more able men. I have as yet seen the first part only, which extends from Ranunculaceæ to Caryophyllaceæ in De Candolle's arrangement. It is written wholly in English, and is full of valuable original observations upon species, genera, and natural orders. The following is an interesting fact:—*Nelumbium luteum.* " The tubers resemble those of the sweet potatoe, when boiled are as farinaceous and agreeable as the potatoe, and are employed for food by the Osage and other Western Indians." It is to be hoped that future numbers will contain more such remarks upon the useful qualities of plants, a subject which systematical Botanists have too often the bad habit of neglecting. People in this country will be surprised to find that our American friends suppose Berberis repens to be a variety of B. aquifolium!

House of Representatives, 25th Congress, 2nd Session, Rep. no. 564. Dr. Henry Perrine. Tropical Plants.

This is an 8vo. pamphlet of 99 pages, containing various letters, reports, &c. connected with a memorial to the House of Representatives of the United States by Dr. Henry Perrine, consul of the United States at Campeachy, praying that the House will grant him a tract of land in Florida, " for the encouragement of the growth of new and important agricultural products, exotic vegetables, and tropical plants." Such a document as this affords the best evidence of the care with which the American government attends to whatever may increase its resources, or contribute to the welfare of its people. It is noticed here partly for the intrinsic value of the information it contains, and partly because it may serve to shew to other governments that Botany leads to something of more practical importance than collecting dried specimens, or writing technical descriptions of species; both very useful things in their way, but not the most likely to interest those who have the charge of public affairs.

It appears that while Dr. Perrine was consul at Campeachy and Tabasco, he was *officially instructed*, by a circular from the United States Treasury, to aid the desire of the general government to introduce into the United States all such foreign trees and plants, of whatever nature, as might give promise, under proper cultivation, of flourishing and becoming useful. In obedience to these instructions, Dr. Perrine devoted his time and funds to enquiring into the resources of the provinces where he was stationed, and thus was led to acquire a knowledge of many very valuable facts, notwithstanding the extreme reluctance of the inhabitants to give Europeans any information concerning the natural productions of their country. Many useful plants and seeds were sent home from time to time; and, upon his return, the memorialist applied for the grant of a township in East Florida, south of 26° N. L. in which his experiments could be conducted; and Congress acceded to his prayer. The Americans are therefore about to commence a grand experiment upon improving their almost uninhabited and worthless southern territories, of which they have between eighteen and twenty millions of acres; and from the energy and good sense of Dr. Perrine, it could hardly have been intrusted to more able hands. In one part of his memorial there is the following passage, which deserves attention from those who are interested in tropical improvements. "Many valuable vegetables of the tropics do actually propagate themselves in the worst soils and situations, in the sun and in the shade, where they arrive either by accident or design; and for other profitable plants of the tropics, which require human skill and care, *moisture* is the equivalent to *manure*. Tropical cultivation essentially consists in *appropriate irrigation*, which goes far to counterbalance the sterility of the soil."

The following are extracts selected from among Dr. Perrine's reports:—

"The *Agave Americana* is still called by travellers the American aloe; and Doctor Mease, with them, has been misled to suppose that this plant produces the *Sisal hemp*, and the *Pita* a much finer material: but the Agave Americana is dedicated to a very different production—the celebrated drink called '*Pulque*,' derived from the sap of its stem; and hence *Maguey de Pulque* is its common name in Mexico. A direct tax on the consumption of this beverage forms an important item in the revenue of that country. 'The entry duties paid in the three cities of Mexico, Tolusa, and Puebla, amounted, in 1793, to the sum of 817,739 piastres.' Humboldt was correct in affirming of the Maguey de Pulque, 'that its cultivation has real advantages over the cultivation of maize, grain, and potatoes; that it is neither affected by drought nor hail, nor the excessive cold which prevails in winter on the higher cordilleras of Mexico; that it grows in the most arid grounds, and frequently on banks of rocks hardly covered with vegetable earth; and that it is one of the most useful of all the productions with which nature has supplied the mountaineers of equinoctial America.' But it is not true that the same plant produces the very fine, very strong, and very long fibres, known by the name of *Pita*, from which the most beautiful sewing thread is made; nor does it furnish those coarser fibres for twine and cordage, resembling Manilla, but denominated *Sisal hemp*. If tropical *hemp* be an admissible term for the latter, the former may be honoured with the distinction of tropical *flax*. The *Ixtla*, whose thin leaves afford the pita, grows wild in the shade of the fertile forests of Tabasco. The *Sosquil ó Henequin*, whose thick leaves yield the *Sisal hemp*, is cultivated in the sun of the sterile plains of Yucatan. The stem of neither supplies the drink which constitutes the principal value of the Agave Americana; nevertheless, a variety of the Maguey de Pulque does grow on the tropical shores of the Gulf of Mexico, from which the highland soldiers have occasionally extracted their favourite beverage. Some of the cultivated Magueys brought from a plantation on the mountains to the garden of a gentleman in Campeachy, are there flourishing, notwithstanding the difference in climate, and have produced shoots, which were by me transmitted to New Orleans. Humboldt says that this plant has become wild since the sixteenth century throughout all the South of Europe, the Canary Islands, and the Coast of Africa; and this fact supports my decided opinion that all the valuable species of the same genus may be successfully cultivated in our Southern States.

"Two varieties of that species, which I take the liberty to christen *Agave Sisalana*, have long been cultivated in the vicinity of Merida, on an extensive scale. Different quantities and qualities of fibres are obtained from several kinds of '*sosquil*' which grow spontaneously through the whole peninsula of Yucatan; but the planters give the preference to the *Sacqui* and *Yaxqui* of the natives, or the whitish and greenish '*Henequen*.' The young plants are placed about twelve Spanish feet apart, and during the first two years some labour is employed to destroy the weeds between them. In the third year, the cutting of the lower rows of leaves is commenced, and every four months the operation is repeated. Each robust plant will thus give about seventy-five leaves annually, from which are extracted about seven pounds and a half of fibres, and will continue yielding these crops from five to ten years in succession; it is, however, generally cut down as soon as one of the shoots from its roots has grown sufficiently to supply its place: its other offspring are previously removed to form new plantations. The hardiness of the shoots may be inferred from the fact that they are exposed to the sun fifteen or twenty days 'to cicatrize their wounds,' as a necessary preparation for replanting. The simplicity of their cultivation may be conceived from the statement that there is not a hoe, nor a spade, nor a harrow, nor a plough, employed in the agriculture of all Yucatan. The facility of extracting the fibres from their leaves is shewn by the rudeness of the instruments which are used by natives for that purpose: a triangular stick of hard wood, with sharp edges, from 24 to 27 inches long, and from one to two inches thick, is with them an equivalent to the shaving-knife of the curriers, by which they scrape away from each side of the leaf, on a board resting against the breast, the cuticle and pulpy substance that covers the fibres. Another mode of accomplishing the same object is, by pressing the sharp semilunar extremity of a long flat stick against any fixed surface upon a narrow longitudinal strip of the leaf, which is then drawn through by the unemployed hand. The length, weight, strength, and other qualities of the fibres, as well as the labour of separating them, vary with the magnitude, age, and position of the leaves; but, when extracted, a few hours' exposure to the sun completes the preparation of the Sisal hemp for manufactures and commerce.

" The above brief sketch will shew that the bales of exported Sisal hemp may contain materials of very different qualities ; and that hence the opinions of its merits expressed by our merchants, our manufacturers, and our scientific men, must vary with the parcels that fall into their hands. The fibres of a single cultivated variety of the Agave Sisalana might be assorted like cotton for the foreign market, with denominations and prices corresponding to their relative value ; but the collectors for exportation, unconscious of the true interests of themselves or their country, not merely mingle the whole products of both the Sacqui and the Yaxqui, but add inferior qualities, obtained from wild varieties of the same, and even of different species ; and injure still further the reputation of this sample abroad, by including the worst proceeds of its imperfect dressings.

" The peninsula of Yucatan embraces the worst soils of any province of Mexico. It is principally composed of arid, cavernous limestone, and has not a river, brook, or spring within several hundred miles of the coast, beginning at Campeachy and running thence north to Sisal, east to Cape Catoche, and south down to Bacalar. Nature has, however, compensated the aridity of both soil and air by bestowing upon the indolent inhabitants very valuable plants, principally composed of large succulent leaves, or long fleshy and fibrous leaves, which propagate themselves both on the stony surfaces of the interior and the sandy shores of the coast. Those species and varieties whose living leaves yield superior substitutes for hemp, are the most remarkable, and the plants themselves are embraced by the natives under the generic name of Henequen. As the Spanish j has the sound of our h, the white or Spanish Mexicans frequently write the common name thus, Jenequen for Henequen. The coarse foliaceous fibres obtained from the green leaves of all the species are called by the generic name of Sosquil. The equivalent to this Mexican term for coarse foliaceous fibres is generally Grass-hemp in the mouth of an American. There are two varieties of cultivated Henequen, called Yashqui and Sacqui by the natives; or the Greenish Henequen and the Whitish Henequen in the translation of the Spaniards. Both these are embraced by me under the denomination of Agave Sisalana. Taking the Yashqui for the type, its generic characters are as follows: corol bell-form; segments converging and longer than the tube. Filaments very long, awl-shaped, and inserted into the base of the segments at or near the top of the tube. Style not half as long as the stamens, and is even very little elevated above the segments of the corol when its three-lobed stigma receives the pollen from the bursting anthers. The corol, stamens, and style continue all permanent on the germ; and the germ itself becomes a cylindrical capsule, which, opening at the top in three divisions, even splits the dried tube of the corol. Its specific character is sufficiently denoted by the smoothness of the edges of the leaves of the Yashqui. Indeed, when very young, it greatly resembles our indigenous Petre, or Yucca gloriosa of the Southern States. The leaves will average three feet long, yet they are frequently five feet long, with a thorn at the point. I once took the exact dimensions of a leaf five feet long. At fifteen inches from the point it was four inches wide and one-eighth of an inch thick; at thirty inches it was five inches wide and two-eighths of an inch thick; at forty-five inches again only four inches wide, but three-eighths of an inch thick; and at radical end merely three inches wide yet four-eighths of an inch thick. It will grow in any arid soil or situation, and propagate itself without cultivation. When the young plants are placed at six feet apart, the mature plants, after the second or third year, will produce, at the very least, 1200 pounds of Sisal hemp per acre. If it be the Sacqui, it will produce double that quantity. Two or three files of the lowest leaves may be cut two or three times yearly from the same plant, at any season, for several years, and for ever from the shoots which supply its place. From the letter of Don Santiago Mendez, Vice-Governor of Yucatan, sufficient data can be obtained to calculate the profit of a plantation of Sisal hemp. The paper of the Henequen Plant Company of Yucatan calculates the expense and profits of 36,000 plants as follows: total expense at the end of three years, 4541 dollars; total produce of the third year, 9015 dollars; divisible gains, 4479 dollars.

"*Pita de Guataca.*—This plant grows wild in the greatest abundance, in the vicinity of the village of Guataca, in the province of Carthagena, where its leaves attain a length of nine to twelve feet, and a thickness of three to four inches. These leaves are linear-lanceolate, with recurved spines along the margins. The fruit is a triangular one-celled capsule, with few seeds. The leaves exceed in length those of the Bromelia Penguin, and of the Bromelia Karatas, both common plants in the West Indies; but in length and strength of foliaceous fibres, the Pita de Guataca excels both. It was introduced into Jamaica in 1831, with the view of propagating it in the dry sandy savannahs of that island, which are at present uncultivated and unproductive. This fibrous substitute for hemp is preferred to common hemp, on account of its superiority in lightness, strength, and durability, especially under the influence of water or moisture. In point of *offal*, compared with common hemp, the advantage is enormous in favour of the Pita hemp.

"It has been calculated that three tons of Pita will make as much cordage, sail, or other cloth, as fifteen tons of undressed hemp. In 1834 the quantity of hemp and flax, from Russia into England alone, was estimated at 25,000 tons; by substituting Pita, at least 74,000 acres of the actual wastes of the West India colonies would be put under lucrative culture. As to the difference in weight, between equal bulks of Pita and common hemp, Dr. Hamilton has ascertained it to be one-sixth in favour of the Pita; and hence, taking the weight of the standing and running rigging of a man-of-war made of hemp at twelve tons, a reduction of two tons in the top weight would be effected by the substitution of Pita. Under the operation of the emancipating laws in the British West Indies, the white planters will be forced to propagate fibrous-leaved plants on their poorest soils, especially because in their preparation for market, horse power can be substituted more profitably and certainly for human power. Doctor Hamilton supposes this Pita de Guataca to belong to a genus between Guzmannia and Pourrettia. He speaks also of another plant, called Pita de Sola, which grows in large quantities at Sola, is probably a species of Agave, and yields coarser, browner, or inferior fibres."

FROZEN POTATOES.

In a memoir laid some months ago before the Institute of France, M. Payen, the celebrated chemist, made some valuable observations upon the subject of frozen Potatoes, which are usually considered useless, and are consequently thrown away. As it appears from his investigations that Potatoes are in no material degree injured by frost, but that they are as nutritious after being frozen as before, and in some respects more useful as food, I translate literally the report made to the Institute by Messrs. Turpin and Dutrochet upon a subject of such vast importance to mankind; premising only that it is the starch of the Potatoe which gives it its nutritive qualities.

Frozen potatoes are usually, after being thawed, thrown away as altogether unfit for food, even for cattle; they are found to have acquired an acrid taste, and the makers of starch know by experience that they do not yield more than 3 or 4 per cent. of starch instead of 16 or 17 per cent. which they furnish in their uninjured state. M. Payen endeavoured to ascertain the cause of this difference. It might be supposed that the effect of a thaw would be to alter the amylaceous matter, in consequence of which it might become soluble. But M. Payen satisfied himself, by exact and positive experiments, that thawed potatoes and those in the natural state each contain exactly the same proportion of soluble and insoluble matter. This being so, there ought to be as much starch in a potatoe after being frozen as before; and consequently M. Payen suspected that the loss of starch experienced by the starch-maker in frozen potatoes was owing to some mechanical obstacle which opposes the extraction and separation of this substance. This idea was confirmed by a microscopical examination of the tissue of the potatoe, thawed and rasped down. We know that the starch is contained in the cells or vesicles of parenchyma, of which the potatoe is composed; the rasp, by tearing open the cells, sets the starch at liberty. It is obvious that if the rasp produces such an effect, the cells must be fixed firmly in the tissue; otherwise they would be only torn asunder by the teeth of the rasp, and the starch which they contain could not get out of the cells. Now M. Payen discovered that this actually happens when a potatoe is successively frozen and thawed; the cells forming the tissue are separated from each other and lose their cohesion, instead of being firmly agglutinated together as in their sound state; and consequently the rasp is unable to tear the cells in pieces, but separates them from each other whole, without allowing the starch they contain to escape. A small number only of the cells are lacerated, and it is they which yield what starch the manufacturer obtains from them, a quantity which scarcely amounts to 3 per cent. The principal part of the starch remains locked up in the pulp which is thrown away.

M. Payen was led incidentally to notice the different proportions of starch lodged in the different parts of a potatoe; and he found that the smallest quantity exists in the centre, which is separated by a circular row of fibres from the outer part, which is the true bark of the tuber. The latter, or cortical part, which abounds in starch, is divided from the epidermis by a thinner tissue, in which is almost exclusively deposited the acrid and venomous matter of the plant, and which is entirely without starch.

This observation explained to M. Payen the cause of frozen potatoes being acrid and strong tasted. In their sound state the acrid matter contained in the rind of the potatoe is not mixed with the other fluids of the parenchyma of the tuber; but when frost has separated the cells of the parenchyma, the fluid then extravasated flows into their interstices, and the acrid and venomous matter dissolved by them partakes of the general diffusion; it is the physical effect of the tendency which fluids placed in contact have to mix with each other.

Proceeding from these observations M. Payen has examined in what manner frozen potatoes can be turned to some useful purpose. As they have not lost any part of their starch, they ought to preserve, after being thawed, all their alimentary qualities, if they are quickly dried after having been properly prepared. M. D'Orbigny states, that in Peru this mode of preserving potatoes for food is commonly employed. The Peruvians cause the tubers to be frozen on their mountains, and then bring them down into their valleys, where the heat rapidly dries them; and in this state of desiccation they preserve their nutritive property for an indefinite time.

It would therefore appear not only that potatoes when frozen may be advantageously employed for food if rapidly dried; but the still more important consequence is to be deduced from the observations of M. Payen, that by killing potatoes by exposure to frost, and then rapidly drying them, the superabundance of a good potatoe harvest may be preserved to meet the wants of a deficient crop in future years.

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8. OBERŌNĬĂ *recūrvă;* acaulis, foliis brevibus acutis, racemo recurvo multifloro, bracteis ovatis integris, petalis obovatis subdentatis, labello subrotundo quadrilobo denticulato mucrone interjecto.

Bombay has produced this curious little plant, which was sent overland to Messrs. Loddiges. It has a pendulous raceme, scarcely more than an inch long, consisting of minute densely imbricated green flowers. Its nearest affinity seems to be with *O. Wightiana, m.* an unpublished species from Madras, of which the following is the character.

9. OBERŌNĬĂ *Wightiānă;* acaulis, foliis ensiformibus, racemo erecto multifloro, bracteis ovatis integris, petalis linearibus, labelli quadrilobi lobis lateralibus rotundatis integris intermediis elongatis truncatis apice denticulatis.

10. MEGACLĪNĬŪM *oxypterum;* pseudobulbis monophyllis acutissimè 4-5-gonis oblongis, folio oblongo coriaceo caulis sine rachi longitudine, rachi ensiformi arcuatâ crispatâ apice tetragonâ pyramidali, bracteis reflexis, sepalis lateralibus ovatis intermedio lineari acuminatissimo, petalis nanis linearibus falcatis, labello crasso linguiformi apice recurvo margine pone basin fimbriato.

A fine species of this very curious genus, obtained from Sierra Leone by Messrs. Loddiges. It is most nearly related to *M. maximum,* from which its sharp-angled pseudo-bulbs at once distinguish it.

11. PLEUROTHĀLLĬS *bicarinātă;* folio oblongo coriaceo planiusculo leviter carinato basi subcordato petiolo acutè canaliculato univaginato breviore, sepalis linearibus æqualibus lateralibus carinatis ad apicem ferè connatis, sepalis lineari-obovatis minutè serratis glabris, labello obovato carnoso medio exarato denticulo inflexo utrinque prope basin.

A native of Brazil, and imported by Messrs. Loddiges. The leaf is five inches long, the petiole six, with a large withered sheath in the middle. The flowers are dull greenish yellow, not unlike those of *P. saurocephala.*

12. SCHOMBŪRGKĬĂ *marginātă.*

This most beautiful Orchidaceous plant, of which there is a figure in the Sertum Orchidaceum, t. 13, and of which so many plants were brought to England in 1834 by Mr. Lance, has at length flowered in this country, with Thomas Brocklehurst, Esq. of the Fence near Macclesfield, who recently imported it from Surinam. The flowers were much paler in their colours than those of the plant in its native country, but this was doubtless owing to the dark season of the year.

13. EPIDĒNDRŪM (HORMĪDĬŪM) *uniflōrūm*; rhizomate moniliformi, floribus solitariis, sepalis petalisque linearibus acuminatis incurvis, labello trilobo columnæ adnato laciniis lateralibus rotundatis erectis intermediâ triangulari acuminatâ, sepalis lateralibus labello suppositis eique adnatis.

A Mexican plant of no beauty, with yellowish green flowers, imported by George Barker, Esq. of Birmingham.

The genus Epidendrum I once thought very natural; but it is now becoming so very extensive, that it comprehends plants with extremely different habits, and it is daily becoming more desirable for it to be divided. But great as is the diversity of appearance among the species, there is a singular uniformity in the structure of their flowers, and it is not a little remarkable that such differences as exist can scarcely be said to be connected with corresponding differences in the organs of vegetation; so that, as far as I am at present able to discover, if Epidendrum is broken up, by means of characters taken from such modifications as are employed for the definition of other genera, the new groups are scarcely more natural than the old one. For this reason I have suppressed the genera Auliza and Amphiglottis of Salisbury, and the Encyclia of Sir William Hooker, as genera depending upon mere differences of habit and not of fructification. For instance, Encyclia has the labellum separate from the column; and if this were always connected with the pseudo-bulbous stem and panicled inflorescence of many of the species, it would be an excellent character; but *E. equitans*, *smaragdinum*, and others, have the disunited lip with an entirely different mode of growth; this is especially the case with the beautiful *E. bicornutum*. So with Auliza of Salisbury, the type of which is *E. ciliare;* this supposed genus was distinguished by there being a long fistular cavity proceeding from the base of the lip down the ovary, or, in other words, by its labellum being calcarate, and the calcar consolidated with the ovary, as happens in

Pelargonium; but the same character exists in *E. vesicatum*, which has no resemblance to *E. ciliare*. With regard to the Mexican plant recently published by Messrs. Knowles and Westcott under the name of *Prosthecia* or *Epithecia glauca*, I fear it must be united with Epidendrum, for it does not differ from the greater part of the Encyclia division in any essential circumstance; the columna is by no means "nana" in the sense in which that word is employed by Botanists, and the process at the back of the apex of the column is common in numerous species of *Epidendrum*, (*rigidum* for instance); and is what, when thinned away, forms a hard or petaloid scale at the back of the column in such plants as *E. ciliare, clavatum, nocturnum, cucullatum*, and many others.

It is for reasons of this kind that I hesitate actually to separate the curious little plant which has given rise to these remarks. Its necklace-shaped pseudo-bulbs placed upon a creeping rhizoma give it a peculiar habit, and have suggested its name, (*ὅρμος*, a necklace); and it is capable of being defined with apparent precision by the union of the anterior sepals with the base of the labellum, to which I know of no parallel in the genus Epidendrum, except in the case of *Epidendrum pygmæum* and *E. cæspitosum*, plants with a similar habit, and no doubt belonging to the same section, subgenus, or genus, whichever Hormidium may eventually become.

14. BRASAVŌLĂ *grandiflōră*; folio (plano ?) angustè lanceolato rigido labello maximo subrotundo-quadrato acuminato ungue longiore, sepalis petalisque linearibus acuminatissimis.

Flowers of this, which is much the finest species of Brasavola yet known, have been lately received from Honduras by the Hon. W. F. Strangways. The limb of the labellum, which is white, is considerably larger than a half-crown, and the sepals and petals are nearly three inches long. Those who have commercial relations with Belize should make a point of obtaining this beautiful plant from their correspondents. It resembles a gigantic specimen of *Br. nodosa*.

15. PONĒRĂ *graminifŏlĭă*, (Nemaconia graminifolia, *Knowles and Westcott, Floral Cabinet, p.* 127); foliis lineari-lanceolatis planis, labello oblongo acuto apice recurvo.

In the *Genera and Species of Orchidaceous plants*, p. 113, a genus was established under the name of Ponera, (from *πονηρος*, miserable, vile, alluding to the wretched appearance of the species) from a Mexican plant in the herbarium of Mr. Lambert. As I had originally no opportunity of critically examining the structure of the plant, further than was afforded by the dissection of a single dried flower, its character was not very complete; and I presume the trifling differences which exist between this species and the description in the above work, are owing to imperfect observations in the latter case. They have however led Messrs. Knowles and Westcott to suppose that this plant forms a new genus, an error which I hasten to correct. Having received flowers of it from Mr. Barker, I find that it agrees in every essential particular with the structure of *P. juncifolia;* so nearly indeed that, if the leaves of the two were not very different, some doubt might be entertained of their being specifically different. *P. graminifolia* is a plant of no beauty, and is chiefly remarkable for having the scabrous stems, which are so conspicuous in the elegant *Arpophyllum spicatum* from the same country.

16. ARPOPHȲLLŪM *spicatum*, La Llave.

One of the most graceful and beautiful of the Mexican Orchidaceæ; it has recently reached England in a living state. The stem is slender, and a foot or foot and half high, with the sheaths as rough as shagreen leather; it is terminated by one long curved leaf, from the axil of which there curves, in an opposite direction, a dense spike of pink or pale purple flowers. It is a species of great rarity even in Mexico, where it has hitherto been only seen at Sultepec and near Arimbaro, growing upon trees. The genus belongs to Epidendreæ, near Ponera, and not to Vandeæ.

HORTICULTURAL SOCIETY'S GARDEN.

All who are interested in the cultivation of exotic plants, will be glad to learn that the Horticultural Society of London are about to erect a most extensive conservatory in their garden at Chiswick. The range will be nearly 500 feet long, running east and west, with a front both to the north and south; the roof will be constructed entirely of iron, glazed with patent sheet glass, and will have the form of a Gothic arch. The west wing, rather more than 180 feet long and 27 feet high, has been contracted for by Messrs. D. and E. Baileys of Holborn, and will probably be completed by the middle of May. The whole range, when executed, will be one of the most extensive in the world. No association of individuals has ever introduced so large a quantity of beautiful and useful plants into this country, as have been procured by the funds of the Horticultural Society of London; but those plants have necessarily been confined very much to hardy species, in consequence of the want of extensive glass-houses. It is now to be expected that greenhouse and stove plants, especially the former, will become a great object of attention with the Society; the effect of which will doubtless be to improve the ornamental character of tender plants in the same degree as that of hardy collections. Few persons know how many objects are within their reach, the beauty of which is far beyond any thing now in our gardens, and that only require space in which to grow them. The following account of the Pisonai, which it is to be hoped will be one of the first novelties established in the Society's new conservatory, will serve to illustrate this assertion.

" *The Pisonai Tree.*—This is one of the most magnificent trees, both in foliage and flower, perhaps that exists. It appears to have been introduced during the Inca dynasty into the vallies of Cusco, where, in a climate the mean temperature of which is 60° Fahr., it attains such a size as I have never witnessed in the largest of our European forest trees. It was generally planted about villages; in that of Yucay, the country residence of the latter Incas, eight leagues from Cusco, there exist specimens of it five fathoms in circumference, and nearly seventy feet high; the foliage, of a deep green, is thick and spreading, the leaf in shape something like the Cinchonas; it flowers in December, and is then one mass of carnation colour. I think it might be naturalized in the south of Europe, and in our greenhouses; the elevation of the places where I have seen it grow to the greatest size, above the sea, are respectively 9500 and 9680 feet."—*Extract of a letter from J. B. Pentland, Esq. to the Hon. W. F. Strangways.*

17. HÛNTLĔYĂ *violācĕă.* *Sertum Orchid. t.* 26. *ined.*

Of this superb plant a specimen has flowered with Messrs. Loddiges, which will be figured in the Sertum in the course of a few months. The flowers are a deep rich violet, darker than the darkest part of *Zyzopetalum Mackaii;* they are between two and three inches in diameter, and are tipped with greenish yellow, melting downwards into white, which soon confounds itself with the general tint of rich violet.

18. JUNIPERUS *squamosa* (Wallich).

This fine species of Indian Juniper has been raised in the garden of the Horticultural Society. It has remarkably rigid leaves, curved inwards at the point; is described by Dr. Royle as extremely common on such mountains as Choor and Kedarkanta, at the height of 11,000 feet, and elsewhere; and is no doubt quite hardy.

19. HŌVĔĂ *crīspă;* ramis gracilibus pilosis, foliis ovato-oblongis mucronatis margine crispis utrinque pilosis, pedunculis subternis petiolorum longitudine, bracteolis sub calyce setaceis, calyce villoso, ovario pedicellato glabro 4-spermo.

A native of the Swan River Colony, raised two years ago in the garden of R. Mangles, Esq. at Sunning Hill; it forms a bush two feet high, with small purple flowers, usually growing in threes, and producing a pretty effect. It flowers in February. I do not find it among the dried collections from this colony.

20. CHEIRŌSTY̆LĬS *parvifŏlĭă;* foliis ultra vaginam petiolatis ovatis acutis undulatis, labelli apice subrotundo 4-dentato callis baseos bipartitis, columnâ minimâ processibus rectis liberis ipsi æqualibus.

Herba tenera, zeylanica, 3-pollicaris; *caule* stricto, tereti, retrorsum piloso apice nudo bracteato. *Folia* 4, distantia, supernè sensim minora; vaginata, glabra, ultra vaginam petiolata; limbo ovato, undulato, acuto, rubro-viridi, 4 lineas longo. *Flores* 3, terminales, minuti, albi, pedicellati, corymbosi; bracteis linearibus acuminatis rufis, pedicellis longioribus. *Ovarium* obpyramidale, piloso-glandulosum. *Sepala* clausa ultra medium connata, glabra, basi paulo ventricosa, obtusiuscula, apice virentia. *Petala* retrorsum falcata, retusa, sepalo supremo agglutinata. *Labellum* sepalis parum longius, liberum, canaliculatum, versus apicem constrictum, apice subrotundum, concavum, trilobum: lobis lateralibus emarginatis; callis baseos incurvis, lucidis, subvirentibus, bipartitis. Ante columnam *processus* duo, liberi, erecti, carnosi, stigmatis longitudine, eique omninò paralleli. *Columna* minima, libera, basi labelli fere abdita, *stigmate* bipartito. *Pollinia* 4, pulverea, glandulæ lineari acutæ inter brachia stigmatis prominenti, agglutinata.

This very interesting, but inconspicuous plant was obtained by Messrs. Loddiges from Ceylon. It is a new species of the genus Cheirostylis, of which one only had been before described by Dr. Blume, and of that I have never been so fortunate as to see specimens. In general aspect it is like a minute *Goodyera*, *G. querceticola* for instance; but it differs from that genus, firstly, in having the sepals united into a tube enclosing the petals and labellum; secondly, in the absence of a pouch from the lip, and, as far as has yet been observed, from all other genera of Neottieæ in having a pair of fleshy processes, analogous to what we find in Habenaria, standing freely in front of the column. This fact is the more interesting to those who occupy themselves with organography, because it proves that the calli found so constantly at the base of the lip of Spiranthes are not analogous to those processes as might be suspected: for in this Cheirostylis the calli and processes are both present.

21. SCAPHYGLŌTTĬS *reflēxă;* foliis semiteretibus supra planis sulcatis apice integerrimis, sepalis lateralibus ovato-triangularibus reflexis, petalis linearibus obtusis, labello oblongo-emarginato obtusissimo undulato medio refracto.

A branching, straggling plant, with slender leaves, and solitary, pale, dull-yellow flowers, with a crimson stain along the middle of the lip. Like the rest of the genus it is a species quite destitute of beauty. It was obtained by Messrs. Loddiges from Demerara.

22. MACRADĒNĬĂ *mŭtĭcă;* foliis coriaceis lineari-lanceolatis dorso convexis, racemo prostrato trifloro bracteis oblongis obtusis cucullatis pedicellis æqualibus, labello cordato-ovato acuto basi cucullato medio transversè calloso, clinandrio serrato, rostello mutico.

Folia solitaria, lineari-lanceolata, coriacea, avenia, dorso convexa, caulibus brevibus compressis teretibus insidentia. *Racemus* radicalis, 3-florus, debilis; *bracteis* brevibus, cucullatis, striatis, sphacelatis. *Flores* sordidè albi, rubro levissimè tinctæ. *Sepala* et *petala* æqualia, linearia, acuta, explanato-patentia. *Labellum* cum columnâ parallelum, nec articulatum, cordato-ovatum, acutum, basi cucullatum; callo elevato canaliculato transverso. *Columna* semiteres, labello duplò brevior; *clinandrio* cucullato denticulato. *Anthera* parva, in fundo cuculli, 2-locularis, cristata. *Pollinia* 2, *caudicula* brevi lineari. *Rostellum* nullo modo elongatum.

A small plant, with dingy white flowers, which flowered with Mr. Knight, of the King's Road, in August 1835. It is said to be a native of Trinidad. It is chiefly remarkable for being destitute of the attenuated rostellum and consequent prolongation of the anther point, from which the name of the genus was formed by Dr. Brown.

23. PĪNŬS *öocărpă.* Schiede.

As cones of this species of Pinus have lately been received by the Horticultural Society from Mexico, and distributed among the Fellows, I extract the following particulars concerning it from the account given of the species by Professor Schlechtendahl.

It was found by Schiede in abundance between Ario and the volcano of Jorullo, not merely in the usual pine region, but also in warm districts, in company with the Fan Palm. It forms a tree from 30 to 40 feet high. The leaves are from eight to eleven inches long; the cones grow singly, and the species is nearly related to *Pinus Montezumæ.*

It is to be presumed that it will prove one of the less hardy species.

24. PĪNŬS *Llaveana.* Schiede.

This species, now for some time in England, and which resisted the winter so well in 1837-8, although it looks more like a shrub than a tree in our gardens, is stated by the same author to form a tree 30 feet high, Schiede found whole woods of it between Zimapan and Real del Oro, and also cultivated occasionally in gardens. The seeds are sold in the markets of Mexico as *pignons*, and are said to be excellent. Professor Schlechtendahl states that the cone figured in Mr. Loudon's Arboretum Britannicum, as belonging to this species, is probably that of *Pinus patula.* The true cone is given in the Pinetum Woburnense.

ORCHIDACEÆ OF BRAZIL.

The following is a free translation of M. Descourtilz's MSS. account of the Orchidaceæ of Brazil, and I am sure it will be read with interest by every one occupied, in however slight a degree, in the cultivation of this singular and beautiful race of plants.

It is in the bosom of the vast solitudes of America that these, the most diversified of plants, spring up, flower, and perish. The entire life of a man, though devoted to their special study, would never finish their examination, so prodigious is the variety of their species, many of which are only seen after the fall of the protector upon which they lived.

There is no part of Brazil, no latitude, no elevation above the sea, where are not to be found Orchidaceæ as different from each other as the conditions under which they grow. Some bask in the heat of the plains, others luxuriate in the agreeable freshness of a stream of water, attaching themselves to the branches of the trees which cover the waves with a verdant grotto; and others, real children of the mist, delight in a drizzling atmosphere, and support with ease the violence of stormy winds, and the often icy coldness of the Serras, whether stationed within a few feet of the earth, or swinging in the air from the boughs of the ancient patriarchs of the forest. Some grow in deep recesses and gloomy arcades, where there is a perpetual circulation of a damp and heated atmosphere; others, on the contrary, prefer the open glades, or Roças, where some fallen trees, whose own foliage has perished, supply them with a scanty but sufficient nourishment.

It is impossible to form an idea of a tropical forest by the woods of Europe, where the ivy is the only parasite which finds a permanent support. The *Sertoes*, or virgin woods, which cover a part of America, present the traveller with scenery incomparable for its majestic character, and rich variety. Who is there that would not be astonished at finding himself amidst a vegetation, of which each individual struggles with its neighbour for existence, darting up, eagerly searching for the light of a cloudless sun and a purer air, only to be found at a prodigious elevation, and leaving darkness and water at their feet. It is here that trees of patriarchal age perish in the embrace of enormous climbers which overwhelm and bear them down, and which are sometimes carried overhead like cables, in other cases interlaced like the meshes of a net, and not unfrequently stand like lofty leaf-capped columns of spiral open-work, after the trees about which they have writhed themselves have fallen to decay within their grasp.

Amidst this forest of ropes of sylvan rigging, grow innumerable Ferns, which hang down in plumes, or festoons, or the gayest lacework, vast quantities of Araceous plants, and especially Tillandsias, forming broad patches of verdure upon a sombre ground. In the midst of airy garlands of Aristolochias, Bignonias, Convolvuluses, and Passion-flowers live the Orchidaceæ, each particular species of which seems to haunt its own peculiar plant. Thus the Epidendrum of the Cinchona refuses to live in the branches of the Lecythis and Couratari, notwithstanding that the seeds of these epiphytes are scattered indiscriminately by the wind. Other tribes again are always from free Orchidaceæ, as the huge trunks of Malvaceous trees, Isoras, Carolineas, Plantains, and Palms.

It is chiefly at the time of flowering that Orchidaceæ become remarkable in their native haunts, and then less for the diversity of their forms, or the gaudiness of their colours, than for the exquisite perfume which most of them exhale. It is thus that I have often been led to the discovery of charming species, lurking amidst the foliage, and which my eye would never have detected.

Changes of seasons are announced with the greatest regularity by the Orchidaceous epiphytes, many of which expand their blossoms amidst hurricanes and torrents of rain which deluge the earth at certain seasons; but seem struck with torpor when the sky recovers its serenity.

HORSE CHESNUTS POISONOUS.

It is not often that facts in natural history can be gleaned from novels; the following note however, furnished by Dr. Bird, upon the Æsculus Ohiotensis figured in this work, plate 51, for the year 1838, is so remarkable that it deserves to be brought under the notice of naturalists; the more especially because it affords an additional reason for recombining the natural order Æsculaceæ with the often poisonous Sapindaceæ.

"The Buck-eye, or American Horse Chesnut, seems to be universally considered in the West a mortal poison; both fruit and leaves. Cattle affected by it, are said to play many remarkable antics, as if intoxicated, turning, twisting, and rolling about and around, until death closes their agonies."—*Nick of the Wood, vol. 1. p. 225. Engl. ed.*

Pinetum Woburnense, or a Catalogue of the Coniferous Plants in the collection of the Duke of Bedford at Woburn Abbey, systematically arranged. 1839.

Under the modest title of "Catalogue" this work, of which only 100 copies have been printed for private distribution, contains a detailed account of all the species of Coniferæ known to cultivators. It forms an imperial 8vo. volume of 226 pages, and is illustrated by 67 coloured plates, exclusive of a frontispiece representing a fine old specimen of the Silver Fir, in the park at Woburn, lithographed after a charming drawing by Lady Charles Russell. This new proof of the generous spirit with which the Duke of Bedford promotes his favourite science, is the more acceptable at the present time, when so many persons are cultivating those majestic forms of vegetation in which the Coniferous order abounds, and when so much attention has been excited by their exceeding beauty as objects of forest scenery, independently of their value to the landholder as a source of wealth, not second even to that of the Oak.

Royal Asiatic Society of Great Britain and Ireland. Proceedings of the Committee of Commerce and Agriculture. 1831.

This is a most important and interesting document. In the year 1837, or thereabouts, some active members of this Society began to call the attention of the Council to the great importance of ascertaining the best method of developing the commercial resources of India; and in pursuance of their recommendations money was subscribed, and a Committee was appointed to conduct the enquiry. It is sufficient to say that Sir Charles Forbes was Chairman, and Mr. Holt Mackenzie, Professor Royle, General Briggs, Col. Sykes, &c. Members of this Committee, to shew the importance that was attached to the subject, and the excellent materials of which the sub-association consisted. Subsequently Mr. Holt Mackenzie became Chairman, and Professor Royle, Secretary; the organization of the Committee was completed, Mr. Edward Solly, Jun. an excellent chemist, was appointed assistant, and business was entered upon in earnest. The proceedings of the year 1838 form the subject of the pamphlet at the head of this article, and he must be blind indeed who does not see that there was urgent necessity for its formation. India is the most extensive of all our foreign possessions, its soil and climate the most varied, and its resources at least as ample as those of the whole continent of North America. And yet the natural powers of the country have been brought so little into action, that a person ignorant of facts might well conclude that her resources were nothing. Whether we look to those productions of the soil which require a temperate climate, or to such as demand the heat and rains of the tropics, all have been alike neglected with the exception of Sugar and Indigo. For Tea we have continued to trust to the Chinese, although vast regions in our own possession are suitable to its production, and we probably would have still remained supine had not the Chinese monopoly been wisely broken through. The raw Cotton of Bengal has, with a few exceptions, been the most worthless in the market; in 1833 that of Surat was sold in the Liverpool market as low as 4¾*d.* a pound, while the worst Carthagena Cotton was worth 7*d.* a lb.; and in 1832 little more than 18,000,000 lbs. of East India Cotton was consumed in England and Scotland, while the consumption of American Cotton amounted at the same time to above 212 millions of pounds. And so of Tobacco; while in the year 1834 nearly 21 millions of pounds paid duty in the United Kingdom, the importation from the East Indies was so small that there was in the market no price for Indian samples. (*Macculloch.*) And yet there cannot be the slightest doubt that India alone might have furnished the whole British consumption of these articles, if their cultivation had been properly directed.

The subjects which have hitherto received the attention of the Committee are in the first place *Caoutchouc.* This valuable substance has as yet been obtained chiefly from Para; and when in the year 1828 samples of it were sent from Assam to one of the principal agency houses at Calcutta, no opinion could be given of its value, although it was at that time selling in London at *two shillings a pound.* But in Sylhet, one of the poorest and most unproductive of our Indian provinces, there are forests of trees yielding this substance, as was long since stated by Dr. Roxburgh, and now that attention has been called to its value, it appears that "several individuals are engaged in collecting it, and that enough will be doubtless procured to meet all the demands of this country." One person alone is reported to have collected 80,000 lbs. weight in a single year, in Lower Assam.

Other subjects of enquiry have been the vegetable secretions yielding *tannin*, in which India is known to abound, the production of *cotton, silk, salt fish, medicinal plants, timber, lime juice, oil seeds, dyeing substances,* &c. and it would appear that in all these branches of trade India possesses ample resources well adapted to commercial purposes.

It is to be hoped that such an enquiry as this will be amply supported, for it is when applied to such purposes as are comprehended in the investigations of this Committee, that science really becomes of value to mankind. If the Committee continue their exertions with energy and discretion for only a few years, they will have done more to render India happy and wealthy than all the other devices of state policy put together.

Illustrations of the Botany and other branches of the Natural History of the Himalayan Mountains, and of the Flora of Cashmere. By J. F. Royle, M.D. Part X. 4to.

The preceding remarks were written when a copy of this work reached me. The part now published is the last but one, and the last is promised in a very short time. Dr. Royle is the Secretary of the Indian Committee above mentioned, and it is already well known that the important results arrived at are mainly owing to his energy and perseverance, combined with an extensive knowledge of India itself. That the latter is of no common kind is amply shewn by the work in question, which unquestionably contains a greater amount of valuable practical information upon useful matters, than any work yet written upon the foreign possessions of any other European power. The following are extracts interesting to horticulturists.

Walnut. The common Walnut, *J. regia*, extends from Greece and Asia Minor over Lebanon and Persia, probably all along the Hindookoosh to the Himalayas. It is abundant in Cashmere, Sirmore, Kemaon, and Nepal. The Persian name of the Walnut fruit is *chuhar-mughz* (four brains).

Quercus semecarpifolia, the *Khursoo* of the hill people, is found in the Himalayas as high as the limits of forests. It is a beautiful species, and would be quite hardy in England.

Betula Bhojputtra, and other noble species of Birch, occupy the loftiest situations on mountains. They also would be hardy.

Poplars. *P. ciliata* and *P. pyriformis* are two fine new species. It is stated that what we call the Lombardy Poplar is a native of the East; it is said in Persian works to be found in Dailim and Tinkaboom, near the south shore of the Caspian. Dr. Royle found it common in India in gardens to the north of the Jumna, whither it had been introduced from the Punjab, and he thinks there is little doubt that, instead of being a hybrid, as some, or of American origin, as other writers have supposed, it was brought to Europe from some Eastern country, in former times, when the communication by the East, and interchange of commodities was greater than in recent times.

Coniferæ. Of these the following Pines are enumerated; 1. *P. longifolia,* called *cheer, sullah,* and *thansa,* occupies the lowest elevations of the Himalaya; this accounts for its being too tender for England. 2. *Surul,* either a distinct variety of the last, or a new species. 3. *Cheer,* a fir found by Mr. Shore near Almorah, which is also possibly different from *P. longifolia.* 4. *P. nepalensis,* a supposed variety of Pinaster, lately found by the collector of His Grace the Duke of Devonshire. 5. *P. excelsa, kuel* of the natives of Sirmore and Gurwhal, now common and hardy in England. 6. A variety or species related to this, found at Bunipa and Toka in Nepal. 7. *P. Smithiana,* a doubtful species, the authority for which is a figure in *Dr. Wallich's plantæ Asiaticæ rariores.* 8. *P. Khutrow* or *Morinda,* now common in our collections. 9. *P. Brunoniana,* a species related to the Hemlock Spruce; a rare plant, found in Nepal, on the northern descent of Sheopore, on Gossainthan, and on the southern borders of the Bhotea pergunnah of Kemaon, where it is called *tan-shing.* 10. *P. Gerardiana,* the *neoza* of the natives, entirely confined to the northern and drier face of the Himalaya, to the south of 32° of latitude; but more to the north, found also on the southern face of the mountains. For this species seed of *P. longifolia* has been hitherto received in England, where it is extremely rare, existing only, as far as I know, at Rolleston in Staffordshire, the seat of Sir Oswald Moseley. 11. The *chilgoza,* of Kunawur, beyond Rampore, along the banks of the Sutlej, from 5000 to 10,000 feet of elevation; supposed by some to be the same as the *neoza,* because both have edible seeds, but upon insufficient testimony. 12. The *deodar,* the most valuable of all the Indian species, and the largest known, being the *deiudar* of Avicenna; it is found at elevations of from 7000 to 12,000 feet, in Nepal, Kemaon, and as far as Cashmere. 13. *Abies Webbiana,* now so well known in this country, called *chilrow, gobrea, sallur,* and *oonum,* a species which grows to a great size, and forms one of the principal ornaments of the forests at considerable elevations. 14. *Abies Pindrow,* a magnificent species even to the limits of forest, at present unknown in England, and employed in the hills, along with the Deodar, for building purposes.

I have been particular in quoting the native names of these valuable plants, in order to enable persons resident in England, the more readily to ask their correspondents for them.

Roscoea alpina. A curious and very pretty little plant, with bright blue flowers, found at the height of 9000 feet and more, where, like the snow-drop in European countries in early spring, it pushes up immediately after the rains, in places where the snow has just melted. This most interesting species would doubtless be hardy in England; it is a most curious deviation in its habits from the usual tenderness of Scitamineæ.

Of *Iris* several species are found in the Himalayas, some of which are very pretty.

DERIVATION OF THE WORD MYRTLE.

At Gilan in Persia there is a spring surrounded by myrtle bushes, and held in great veneration. The sacred character of the myrtle (*múrt* as it is called in Persia, from which was borrowed the Greek μυρτος) I believe to have originated in the East. Its connexion with the worship of Venus is well known, and it is a curious relic of ancient observances, that, at the present day, wherever the myrtle bush is found among the Kurdish mountains (and it is very rare) a sort of mystic reverence is attached to the spot, which the people are altogether unable to explain.—*Major Rawlinson's March from Zohab to Khuzistan*, in Journal of Geog. Soc. ix. 43.

Recherches sur l'analyse et la Composition chimiques de la Betterave à sucre, par Eugene Péligot; *et sur l'organization anatomique de cette racine,* par J. Decaisne. Paris, 1839. 8vo.

The cultivation of Beet root has not much importance in this country, where colonial sugar, for political reasons, enjoys a monopoly of consumption; but to those who in other countries occupy themselves with the manufacture of Beet root sugar, this pamphlet will be read with great interest. It is full of curious and valuable research. The best variety for cultivation appears on the whole to be the "White Silesian." The principal obstacle to the manufacture of the sugar arises from the presence of great quantities of raphides, that is internal microscopical crystals, (not of oxalate of lime) ; it appears that such crystals are found exclusively in the parenchyma of the ascending part of the plant; that is to say, in the above-ground part of the root, and in the stems and leaves. The quantity of such crystals is affected essentially by the soil in which the plants are cultivated ; in highly manured, rich soil, frequently watered, they are found to exist to the amount of $1\frac{1}{2}$ per cent., which was rather more than the quantity of sugar contained in the leaves examined. The sugar was found by M. Decaisne to be secreted exclusively in the parenchyma, and in a limpid state.

Illustrations of Indian Botany, by Robert Wight, M.D. 4to. Madras, 1838; published in numbers, each containing 8 coloured plates, with appropriate letter-press.

Of this work six numbers have reached me. It is executed on the plan of Royle's Illustrations, and is intended to bring the Botany of India before the people of India in a cheap and interesting shape, an object which there can be no doubt that it will accomplish. The price is so moderate that it is secure of a remunerating sale, and there is therefore no room to doubt that Dr. Wight will complete his undertaking. The plates are executed in lithography, and are characteristic of the plants ; if they want the neatness and finish of European works, they fully answer the purpose for which they are destined. It is impossible not to regard this work as one of the many means which are now silently, but surely, working in harmony towards the great national end of improving the resources of the British possessions in India. One of the great obstacles to this important object, so far as the vegetable kingdom is concerned, has been the difficulty of ascertaining to what plants the native names of useful products really apply. Like all vernacular names, those of India are uncertain and unstable; the same name being given to one plant in one province, and to another in some other province. One of the results of Dr. Wight's work will be to enable residents in India to give plants their scientific names, and thus to render certain and precise what must otherwise be most uncertain and deceptive.

Among the more curious plants illustrated in the first six numbers, are species of the genera Acrotrema, Schumacheria, Hydnocarpus, Xanthophyllum, Hugonia, Hopea, Opilia, and Hebradendron. Among the useful plants are Berberis tinctoria of the Neelgherry Hills, which is stated, upon the authority of Vauquelin, to be inferior to few woods for dyeing yellow ; on the plate representing this species are three squares coloured to imitate the cloths dyed with the plant in India ; one is pale clear yellow, a second pale green, the third light greenish blue.

FRANKINCENSE OF SIERRA LEONE.

The "Bungo," or Frankincense tree, is an evergreen, and one of the most graceful in an African forest ; it grows in great abundance in the colony and in the neighbourhood, and is generally found in rather elevated situations ; its foliage is a very dark green, the leaf smooth and pointed, and not large ; the trunk, which is rather smooth at first, is then curiously marked with white patches, which make the tree very remarkable at a distance. The lower stem is almost invariably perfectly straight, and at the height of 20 or 25 feet usually branches off ; the range of height of the trees I have seen may be from 40 to 60 feet ; when aged the bark becomes rugged, very thick, and the white patches disappear ; the flower is very simple, white and small. I do not recollect ever seeing any seed ; the natives have a notion that the tree cannot be propagated except by nature (unassisted). I made some attempts, but did not succeed.

The tree (and especially the branches) is subject to the ravages of an insect, which must be of considerable size, from the holes it bores in every direction being commonly about half an inch in diameter ; the operations of this insect occasion the production of the "Bungo" in very considerable quantities ; sometimes no doubt the gum drops pure from the tree, but the chief supply is mixed up with woody particles resembling sawdust, and is forced from the holes by the insect, and gathered from the grass and ground by the natives. When fresh the gum is of a light reddish colour, translucent and very fragrant, soft and adhesive.

The native Timmanee women use the gum, powdered and mixed with palm oil, as a kind of perfume, and it is commonly sold in the market of Freetown (without any previous preparation) for this purpose.

The gum, when burnt on a red hot plate of iron, gives forth a very grateful and highly aromatic odour ; by some it is supposed to be the true "Thus." I do not consider myself qualified to offer any opinion in that respect. The wood makes excellent fuel; the perfume it diffuses whilst burning is extremely agreeable to most persons. I do not know that it is applied to any other purpose.—*Extract of a letter from M. S. Melville, Esq. of Stirling, to James Bandinel, Esq.; dated March 2nd,* 1839.

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25. CŒLŎGY̆NĒ *ocellātă.* (Gen. et Sp. Orch. 40.)

This beautiful plant has just flowered imperfectly with Messrs. Loddidges, who imported it from India. The sepals and petals are pure white; the lip is also white, but it has two very bright orange yellow spots on each lateral lobe, and two others smaller, and of the same colour at the base of the middle lobe, besides which there are some lateral streaks of brown. The column is bordered with brilliant orange yellow. The crests of the lip are three, which converge towards the base of the middle lobe, and there the lateral ones diverge again over a pair of convexities, beyond which they disappear; on each side of them, at the base of the said convexities, and on the outside, is an additional short curled crest. The flowers grow in erect racemes about six inches long, and are themselves an inch or more long.

26. DENDRŌBĬŪM *linguæfōrmĕ.* (Swartz.)

I have formerly received this curious plant in flower from various collections, but never in such perfection as from the garden of Richard Harrison, Esq. of Aighburgh, who cultivates it upon the decayed branch of a tree. It inhabits the country near Sydney, in New South Wales, where it was found by the earliest Botanists who visited that colony. It has hard, thick tongue-shaped leaves, lying flat upon the rhizoma which creeps upon the rock or tree it grows on; they have the texture of an Aloe, and probably indicate that the species does not inhabit damp shaded places, but rather such hot dry situations as Mr. Cunningham assigns to *Dendrobium æmulum* and *undulatum;* see Bot. Register, fol. 1699, for observations upon the culture of these plants. The flowers are greenish white, with long slender sepals and petals, and appear from the young ends of the rhizomata. They have no smell, nor any feature of beauty.

27. SARCOCHĪLŬS *olivācĕŭs;* foliis oblongis membranaceis falcatis apice acutis integris, racemo flexuoso angulato 4-5-floro nutante, sepalis lineari-obovatis obtusis: intermedio latiore petalisque conformibus minoribus columnæ dorso adnatis, labelli cum columnâ productâ articulati lobo medio minimo transverso rotundato lateralibus acuminatis; disco callis variis crassis rotundatis tuberculato.

A New Holland epiphyte of no beauty, imported by Messrs. Loddiges. It is very nearly the same as S. *parviflorus,* from which it principally differs in its leaves being broader and not emarginate at the point. The flowers are small and yellowish orange green.

28. HŌVĔĂ *pūngēns.* (Hügel enum. p. 36. Botanisch. Archiv. t. ?.)

For specimens of this beautiful plant I am indebted to Robert Mangles, Esq. who raised it from Swan River seeds. A figure of it has already been given in Baron Hugel's Botanisches Archiv. It forms a small bush, with narrow leaves resembling those of Rosemary, but terminated by a slender pungent spine. The flowers grow singly in the axils of the upper leaves, and are of the most intense cobalt blue. I find upon comparing the garden plant with wild specimens given me by Captain James Mangles, that, as is usual with Swan River plants, the cultivated specimens are much finer than the wild ones.

29. DENDRŌBĬŪM *teretifŏlĭūm.* (R. Brown prodr. nov. holl. 189.)

This curious plant, which is well defined by Dr. Brown, has lately flowered with Messrs. Loddiges. It is a small creeping species, with deep green fleshy taper leaves, between two and three inches long, and solitary flowers of a dull yellow, streaked and spotted with dull purple; the labellum is white. It is a plant of no beauty.

As the importation of New Holland Orchidaceous epiphytes has taken place to some extent, it is desirable that there should now be made known an account of several species first discovered by Mr. Allan Cunningham, and of which notes were given me by my indefatigable friend in June 1834. The credit of his discoveries will thus be secured to their author, those who may import the plants will be able to determine their names, and to ascertain whether they are new or not, and there will be the additional advantage of proving that no species of striking beauty are to be expected from this part of the world, as none of those found by Mr. Cunningham can be considered more than Botanical curiosities.

NOTES OF ORCHIDACEOUS EPIPHYTES OF NEW SOUTH WALES.

By Allan Cunningham, Esq.

30. DENDROBIUM *tetragonum;* caulibus gracilibus erectis elongatis quadrangularibus apice clavatis 2-3-phyllis, foliis ovato-lanceolatis acutis undulatis striatis s. nervosis glabris racemo terminali 2-4-floro longioribus, foliolis perianthii elongato-linearibus patentibus, labello vittato: disco tricarinato, lobo medio dilatato subcordato acuto.

An epiphyte, hanging loosely from the stems of small trees, in *dry* shaded woods, Moreton Bay. June 1828.

31. DENDROBIUM *tortile.* (Perhaps a Polystachya.)?

. On the upper branches of the loftiest trees of Flindersia australis, 100 feet high; in shaded woods, Brisbane River, Moreton Bay. Oct. 1824. June 1828.

32. DENDROBIUM? *pygmæum.* (*D. Caleyi,* Cunn. in Bot. Mag. Compan. II. 377.)

On rocks in the Illawarra district. Flowers not known.

33. DENDROBIUM *elongatum;* caulibus articulatis teretibus sulcatis elongatis erectis 4-5-phyllis, foliis ovato-lanceolatis acutiusculis apice obliquis emarginatis, racemo terminali 3-10-floro, foliolis perianthii ovatis obtusiusculis, labelli disco 3-carinato lobo intermedio lato cordiformi.

On trees in shaded dark woods, on the banks of the Brisbane River. Sept. 1828.

34. DENDROBIUM *pugioniforme;* caulibus repentibus nodoso-articulatis radicalibus setoso-stipulatis, foliis elliptico-lanceolatis apice attenuatis acutis carnosis infra fere convexis carinatis lævibus nitentibus, floribus (resupinatis) subsolitariis axillaribus, perianthii foliolis oblongo-lanceolatis acutis patentibus, labello longitudinaliter tricarinato, lobo intermedio dilatato undulato-crispato apice acuto recurvato.

A beautiful epiphyte, hanging loosely from the stems of trees, so as to swing freely to the wind that sweeps through the forests on the summit of the belt of mountain bounding the coast district of Illawarra, on the west (lat. 34½ S.) and flowering in August. 1818.

Obs. This species approaches so near D. *rigidum* Br. prodr. (not of Gen. et Sp. Orch. p. 86. n. 51) that I have often viewed it as the same plant which was described by Mr. Brown, from a figure in the Banksian collection. It now appears to me distinct.

35. DENDROBIUM? *crassulæfolium.*

Of this I have no specimens or description. It is a plant growing on trees in ravines of the Blue Mountains. Never seen in flower. The pseudobulbs are oval and one-leafed; the leaf is small and oval.

36. DENDROBIUM ? *complanatum.*

An epiphyte growing in tufts. It has a flattened base, and cultriform distichous leaves: the whole plant, although healthy, is of a yellow green colour. On dead trees, in shaded woods, at Moreton Bay. 1828. Flowers not seen.

37. CYMBIDIUM *iridifolium;* foliis elongato-linearibus, racemis multifloris bracteatis, perianthii foliolis patentibus (exterioribus tribus ellipticis obtusis) labello 3-lobato: lobo intermedio linguiformi disco ecarinato glanduloso-punctato nitido.

On decayed trunks of trees in large masses, damp shaded woods on the Brisbane River. July 1828. This plant was alive at Kew.

38. CYMBIDIUM —— ?; caule radicante scandente, foliis alternis lanceolatis acutis subcarnosis, racemis axillaribus laxis, fol. perianthii conniventibus labello carnoso 3-lobato, basi cavo.

A Vanda looking plant, in habit very much like V. teretifolia. *Lindl. Coll. bot. t.* 6. Can it be Epidendrum triste, *Forst.* which that Botanist discovered in New Caledonia? My plant, of which I only detected a single specimen, was hanging to the thin laminated bark of the trunk of *Callistemon rigidum,* in small open savannahs, subject to inundation; near the banks of the Brisbane River. Sept. 1829.

39. CALANTHE *veratrifolia. R. Br.*

In August 1822, whilst on an excursion to the Illawarra, a coast district on the south of Port Jackson, I met with a plant in dark shaded woods, which I introduced to Kew, in the following year, considering it a Bletia. It soon afterwards flowered in that collection, and was then ascertained to differ in no one respect from the Java plant. They have repeatedly been in flower together since that period, and on a close critical examination of the two plants, no difference could be discovered, excepting that the Australian plant is not so purely white in the flower as the Java one; their identity is therefore clearly determined. Illawarra district, near Port Jackson, (lat. 34½. S.) is therefore another locality.

40. PHAJUS *grandifolius.* Loureiro.

This plant I discovered in Sept. 1824, growing in extensive swamps at the back of the beach, on the shores of Moreton Bay, in lat. 27½, from whence I sent a large tub of the plant to Kew, where, on flowering, it proved to be identical with the old Limodorum Tankervilliæ; and of its flower M. Bauer made a drawing. Moreton Bay therefore is another locality.

41. DENDRŌBĬŪM *Heyneānūm*. Gen. & Sp. Orch. p. 90.

This very pretty species has flowered imperfectly with Messrs. Loddiges, who received it from Bombay by the overland conveyance. Its exact locality was not before known, the specimens in Heyne's herbarium, where I found the species, affording no information upon that point. In a healthy state the plant forms a tuft of slender clavate stems, from four to six inches high, loosely covered with the withered sheaths of leaves that have fallen off. From all sides there appear in the flowering season slender spreading racemes about three inches long, having each from five to nine smallish white flowers, with a greenish-yellow lip beautifully streaked with violet; they have no smell.

42. LÆLĬĂ *majālĭs*. Lindl. mss. (*Cattleya Grahami*. Gen. & Sp. Orch. 116.)

This plant, the *Flor de Mayo* of the natives of San Bartolo, and the adjoining parts of Mexico, has lately been received by the Horticultural Society of London from Mr. Hartweg, who found it on the mountains near Leon, growing upon oak trees, at the height of 8000 feet, where it sometimes freezes. I possess specimens (No. 3.) given me by Prof. Schlechtendahl, gathered by Dr. Schiede in the same situations. It is one of the most beautiful of the whole order; a dried flower now before me, of a bright violet colour, measures nearly five inches from the tip of one petal to that of another, and when fresh I have no doubt the expansion of the flower was as much as six inches. The labellum is still nearly two inches and a half long. Many plants of this magnificent species have been given away by the Horticultural Society; but it proves exceedingly difficult of cultivation.

43. OCTOMĔRĬĂ *tridentātă;* folio ovali-lanceolato crassissimo acuto, floribus fasciculatis, labello oblongo basi angustato apice tridentato auriculâ utrinque rotundatâ inflexâ: lamellis obsoletis.

A Demerara plant of no beauty. The flowers are bright yellow; the leaves are remarkably thick and hard.

44. POLYSTĂCHYĂ *affīnĭs*. Gen. et Sp. Orch. p. 73.

This has lately flowered with Messrs. Loddiges, who imported it from Sierra Leone. It proves extremely different from *P. puberula*, of which I once thought it might be a variety, and has larger flowers than any of the racemose species of the genus. Sir W. Hooker has observed a gland and caudicula in my *Polystachya macrantha* (Bot. Mag. t. 3707.), which is probably the *Dendrobium galeatum* of Swartz; I had previously noted the same thing in *P. ramulosa* (Bot. Reg. 1838. misc. no. 144.), and I find a similar structure in the present species; it is therefore probable that the genus Polystachya should be placed in Vandeæ, among the genera belonging to which subdivision a better station may be found for it than next to Dendrobium.

45. ISOCHĪLŬS *līvĭdūm*: pseudobulbis fusiformibus attenuatis squamis pallidis membranaceis arctè vestitis, foliis solitariis linearibus apice obscurè 2-3-dentatis, racemo capillari secundo nutante subtrifloro folio multò breviore, sepalis petalisque ovatis concavis patulis, labello cordato revoluto apice foveato basi mellifero.

A small dingy-flowered plant, imported from Mexico by George Barker, Esq. of Birmingham. Its livid semitransparent flowers, and slender pedicels, are accompanied by spindle-shaped pseudobulbs, tightly covered with sheaths, resembling in colour the external skin of the onion which gardeners call "the silver-skinned."

46. DENDRŌBĬŪM *macrophȳllūm*; foliis ovato-oblongis obtusis nervosis basi subcordatis, sepalis lanceolatis lateralibus parùm productis, petalis oblongis acutis, labello pubescente convoluto denticulato subunguiculato ovato callo baseos elevato transverso obsoletè trilobo.

This, the handsomest of the Dendrobia, has been received by Messrs. Loddiges from Manilla, where it was found by Mr. Cuming. The flowers are nine inches in circumference, and will probably be still larger when the plant becomes more healthy. The sepals and petals are a clear and bright rose-colour, the lip is downy and deeply stained with two large broad blood-red blotches at its base.

47. CĀTTLĔYĂ *supērbă*; foliis ovato-oblongis obtusis coriaceis marginatis caule clavato brevioribus, sepalis oblongis acutiusculis, petalis lanceolatis acutis membranaceis duplò latioribus, labelli trilobi cucullati lobis lateralibus acutis: intermedio transverso plano denticulato emarginato subunguiculato basi venis elevatis rugoso; callis duobus pone basin. *Sertum Orchidaceum, t.* 22.

This magnificent sweet-scented Cattleya has been found in British Guayana by Mr. Schomburgk, who sent a live plant of it to Messrs. Loddiges, and a drawing to the Linnean

Society, by permission of which a figure has been published in the Sertum Orchidaceum. The flowers, if not so large as those of Cattleya Mossiæ, are, from the richness of their colours, inferior to none in beauty. According to Mr. Schomburgk, the plant appears peculiar to the 3rd or 4th degree of N. Lat. ; it is not to be met with in the Essequibo north of the mouth of the Rupununy ; from thence it is found southwards on trees which skirt the banks of the brooks and rivers which meander through the savannahs. He discovered only a few solitary specimens in the Essequibo south of the Cayuwini, and none at the equator. The Caribees call it *Oponopodoli*, or *Ducksmouth*, the Macoosees *Masame*. It is very fragrant; the odour in the morning is said to become too powerful in a confined place ; the splendid flowers last from three to four weeks.

Although only now brought into notice, the species was many years since discovered by Dr. Von Martius, who found it near Taruma on the banks of the Rio Negro, in woods at the Barra de Rio Negro, and in forests near Parà. It is readily distinguished from all previously described species by its three-lobed lip with acute lateral segments, the middle lobe being flat, toothletted and emarginate, and by the cluster of elevated veins at the junction of the epichilium and hypochilium.

48. SALVIA *patens*. Tab. 23. of this volume.

The first importer of this valuable plant was inadvertently stated to be Mr. Rogers of Southampton instead of Mr. W. B. Page of the same place. In the account of this species in the Transactions of the Horticultural Society the fact is given correctly, and I now hasten to correct an accidental error which, if unaltered, would deprive Mr. Page of the credit which he deserves for having first introduced this great ornament to our gardens.

49. DĒUTZĬĂ *corymbōsă* (Wall. cat. no. 3652); foliis ovato-oblongis acuminatis serratis sparsè stellatim pilosis, floribus cymosis 4-5-gynis, dente intermedio staminum lateralibus æquali, fructibus pisiformibus lepidotis.

A new hardy Himalayan shrub, flowers of which were produced in the garden of the Horticultural Society in March last, in the greenhouse. They are white, about half the size of those of D. scabra, lemon-scented, and arranged in copious cymes, which appear, from the dried wild specimens before me, to form in great abundance when the plant is vigorous. Upon one branch 18 inches long I count seven clusters, each of which has on an average forty blossoms. It was received under the name of *D. canescens.*

50. EPIDĒNDRŬM *glumācĕūm;* pseudobulbis ovatis apice angustatis diphyllis, foliis angustè oblongis patentibus, racemo terminali cylindraceo e squamis glumaceis acuminatissimis pedunculo longioribus erumpente, sepalis linearibus petalisque lineari-lanceolatis acuminatissimis, labello obovato acuminato convexo integerrimo basi unicalloso.

A Brazilian plant very near *E. fragrans,* from which it differs in the form of the lip, and in the colour of the flowers, which are white delicately striped with pink. It is a pretty species, with a raceme about five inches long.

51. GOVĒNĬĂ *Gardnērī* (Hooker in Bot. Mag. t. 3660); scapo obtusè tetragono medio vaginato, racemo elongato floribus post anthesin refractis, bracteis oblongis herbaceis ovarii dimidio longitudine, sepalis petalisque ovatis obtusiusculis, labello ovato acuto nudo apice maculis 5 marginalibus notato lineis duabus convexis convergentibus in medio, anthera cornu brevi inflexo.

The figure of this plant in the Botanical Magazine seems to have been taken from a specimen out of health, for the colour of the flowers and their markings are by no means such as I find them in a specimen now before me, for which I have to thank my friend John Miers, Esq. F. L. S. of 14, Hans Place, Chelsea. The flowers are pure white; the petals are delicately spotted with violet dots inside; the lip is downy at the base, and yellowish-green, except at the point, where it is white, with five small equidistant spots, of which the three in the middle are bright orange colour, and the two side ones, which are much more indistinct, dull purple. Mr. Miers tells me that he found it flowering in the month of February on the Organ Mountains, at two distant intervals from 3000 to 3500 feet above the level of the sea; at the lower one in an exposed situation on a bank, at the higher, in a wood upon a quantity of rich mould in the hollow of a decaying tree.

52. SACCOLĀBĬŪM *micrānthūm* (Gen. et Sp. Orch. p. 220.)

This curious little plant has flowered with Messrs. Loddiges. Its flowers are pale violet, with the limb of the labellum much darker. It should rather be referred to the genus Cleisostoma.

53. ABŪTĬLŎN *strīatūm* (Dickson in *Botanist* ined.); foliis trilobis serratis glabriusculis basi subcordatis: lobis acuminatis, pedunculis capillaribus longissimis, floribus campanulatis petalis retusis, stylis 8.

This south Brazilian species has found its way into many gardens in England, having been received from the Glasgow collection. It is a greenhouse shrub of the easiest culture, and of great beauty, being covered all the year long with a profusion of bell-shaped orange flowers, strongly veined with crimson, and dependent from long slender stalks. The finest specimens I have seen have been those belonging to John Sheepshanks, Esq. of Blackheath. It appears nearly related to A. elegans of Auguste de St. Hiliare.

54. CYRTOCHĪLŪM *stellatum*; pseudobulbis diphyllis ovalibus compressis striatis inter squamas lanceolatas carinatas axillaribus, foliis ligulatis obtusis aveniis scapo multò brevioribus, scapo tereti erecto basi vaginato, racemo disticho multifloro, bracteis carinatis convolutis acuminatis glumaceis ovario longioribus, sepalis petalisque lineari-obovatis acutis stellatis, labello oblongo undulato acuto basi canaliculato striato, alis columnæ acinaciformibus integerrimis. *Sertum Orchidaceum, plate* 7.

This noble species, nearly related to C. flavescens of the *Botanical Register*, t. 1627, but differing in its much larger flowers, the sepals of which are by no means acuminated, but only drawn to a sharp point; in the greater breadth of the pseudo-bulbs; in its stature being four times as great; and in the labellum being white instead of yellow, has lately flowered in the Nursery of Mr. J. Youell, Nurseryman, of Great Yarmouth.

M. Descourtilz found it dispersed through the districts of Macahé and Bananal. It flowers in September and remains in that state till the end of January. It diffuses but a weak perfume, but the beautiful spikes, which seen at a distance make it resemble a mass of verdure strewed with large stars, render it a most remarkable object.

55. EYSENHĀRDTĬĂ *amorphoīdēs*. *Humb. Bonpl. et Kunth nov. gen. et sp. pl.* vi. 489. *t.* 592.

Seeds of this beautiful shrub having been distributed by the Horticultural Society, and a few plants raised from seeds obtained from Mexico by Geo. Frederick Dickson, Esq. in 1837, having proved perfectly hardy, it is desirable to give a short account of it. It inhabits the mountains of Mexico, where it forms a small tree, with small pinnated leaves, like those of an Acacia, but distinctly marked with glandular dotting; a very unusual case among Leguminous plants. The twigs are short, and so closely set upon the branches as to form a dense mass of foliage; each is terminated by an erect compact spike, from two to three inches long, of white or pale yellow flowers, which although not larger than those of a Spiræa, nevertheless from their abundance must produce a beautiful appearance.

Genera Plantarum secundum Ordines naturales disposita; auctore *Stephano Endlicher.* Vindobonæ, 4to.

There has been no Genera Plantarum published since that of Jussieu in 1789, with the exception of reprints, and the worthless compilation by Sprengel; and during the long interval that has since elapsed, the science of Botany has grown from a dwarf of almost Lilliputian dimensions to the stature of an Anak. The number of genera recognized by Jussieu was something less than 2000; the list of genera at the end of the 2nd edition of my Natural System of Botany in 1836, was 7840, and many more have to be added. The publication of a new digest of the genera of plants, with their characters as limited by the best authorities, or defined by original observation, had therefore become a work of the greatest necessity to all persons occupied with the study of the science; but it was at the same time so difficult, that no person could be found with energy enough to attempt its execution, till Dr. Endlicher, of Vienna, a learned man and an excellent Botanist, with the Imperial libraries and collections of that capital to assist him, seriously set himself to accomplish this great purpose.

In August, 1836, the first part of the work made its appearance, written in Latin, and arranged according to a system peculiar to the author. It contained the characters of the classes, sub-classes, and natural orders and genera, written with an elegance of language too seldom found in the works of modern Botanists. It was accompanied by a "Conspectus diagnosticus," or short abstract of the distinctive characters of the classes, orders, &c. and a copious Index; and subsequently a "Conspectus dispositionis," or arranged Catalogue of the names of the classes, orders, &c. has been commenced. The work has now reached the tenth part, and the last genus is numbered 4583. How many more parts are to be expected is not known; but supposing the whole number of genera known to Dr. Endlicher to be 8000, it may be supposed that the work will be brought to a close in seven or eight more parts, or in about a year and a half. The period of its completion will form an era in the history of systematical Botany. Independently of its great importance on account of the singular skill and care with which it is written, it possesses an additional value in consequence of the numerous references to books in which descriptions and figures of the genera may be found.

Simultaneously with this great work the same indefatigable author is publishing an *Iconographia Generum plantarum*, or illustrations of the genera described by him. It appears in 4to. or folio parts, with uncoloured figures executed in outline by artists of the highest eminence. Seven parts have now appeared, and the number of the last plate is 84. Independently of the other important materials of which Dr. Endlicher is able to avail himself for this work, he has access to the beautiful series of drawings of New Holland plants, executed by Mr. Ferdinand Bauer during Flinders's expedition, and bought by the Austrian government upon his death. The originals are somewhere in this country, but where deposited I am not at present able to state. It is well known that in 1813 an attempt was made by Mr. Bauer to publish them in this country, but no effectual support was afforded him by either the men of science or the government of the day; and although the plates were engraved with his own hand, and with exquisite skill, the publication never proceeded beyond three numbers. It is impossible not to feel it a national disgrace that such valuable materials, collected at the cost of the English government, should only make their appearance nearly thirty years after their acquisition, and then by the energy and zeal of a learned foreigner.

A Flora of North America, &c. &c. by John Torrey and Asa Gray, vol. i. *part* ii. See page 5 of this volume.

The second part of this valuable work has reached England. It proceeds from Caryophylleæ to the middle of Leguminosæ, in the order of DeCandolle's arrangement, and like its predecessor, exhibits equal care and talent in the determination and definition of the genera and species. It is rich in new species from California and Oregon, collected by Mr. Nuttall, and among other interesting matter, includes the following new genera.

STYPHONIA, an Anacardiaceous tree from California.

OREOPHILA, a Celastraceous plant, named *Ilex myrsinites* by Pursh, and *Myginda myrtifolia* by Nuttall, DeCandolle, and others.

ASTROPHIA, a Leguminous plant from the Oregon, related to *Lathyrus* and *Orobus.*

HOMALOBUS, a Leguminous genus, composed of several herbaceous species, with the habit of *Phaca* and nearly the legumes of *Vicia;* to this are referred the *Phaca nigrescens* of Hooker, and *Orobus dispar* of Nuttall.

KENTROPHYTA, consisting of two Leguminous plants, from the hills of the Platte, allied to the last.

CHAPMANNIA, another Leguminous plant, related to Stylosanthes on the one hand, and to Arachis on the other, found at Tampa bay in East Florida.

Among other things relating to species, it appears that the *Ceanothus azureus* of our gardens, is not the plant so named by Desfontaines, which came from Mexico, but the *C. thyrsiflorus* of Eschscholtz, a Californian species.

CLIMATE OF BRAZILIAN ORCHIDACEÆ.

"Although this is the summer season, the thermometer has never been higher than 84° in the shade at noon,—it ranges from 68 to 75° and is seldom higher: but after a few days continued rain, I have observed it as low as 62°. In the winter season it sometimes descends to 32° during the night. All the European vegetables grow pretty well, as also several fruits, such as the apple, the fig, the grape, the olive, and peach. The tea plant thrives well, but it is too cold for the orange and the coffee; the plants themselves grow luxuriantly, but their fruits do not come to perfection."—*Extract of a letter to George Wailes, Esq. of Newcastle, from Mr. Gardner, dated January,* 1837, *and written amongst the Organ Mountains, at an elevation of* 3100 *feet.*

HABITS OF BRAZILIAN PARASITES.

The destruction of a tree in these woods does not lessen the abundance of vegetable life. On every blasted stem which had lost its own bark and leaves, a crop of parasites had succeeded, and covered the naked wood with their no less luxuriant leaves and flowers. Of these the different species of air-plants and Tillandsias were most remarkable.—The first were no less singular than beautiful; they attach themselves to the dryest and most sapless surface, and bloom as if issuing from the richest soils. A specimen of one of these, which I thought curious, I threw into my portmanteau, where it was forgotten ; and some months after, in unfolding some linen, I was astonished to find a rich scarlet flower, of the gynandrous class, in full blow ; it had not only lived, but vegetated and blossomed, though so long secluded from air, light, and humidity. Every withered tree here was covered with them, bearing flowers of all hues, from the brightest yellow to the deepest scarlet. They are easily propagated by transplanting; and my good friend, Col. Cunningham, had all the trees in his garden at Boto Fogo covered with them. The Tillandsia is not less extraordinary.—It also grows on sapless trees, and never on the ground. Its seeds are furnished, on the crown, with a long filmy fibre, like the thread of a gossamer. As they ripen, they are detached, and driven with the wind, having the long thread streaming behind them. When they meet with the obstruction of a withered branch, the thread is caught, and revolving round, the seed at length comes into fixed contact with the surface, where it soon vegetates, and supplies the naked arm with a new foliage. Here it grows, like the common plant of a pine apple, and shoots from its centre a long spike of bright scarlet blossoms. In some species (Tillandsia utriculata, and lingulata) the leaves are protuberant below, and form vessels like pitchers, which catch and retain the rain water, furnishing cool and limpid draughts to the heated traveller, in elevations where no water is to be found. The quantity of fluid contained in these reservoirs is sometimes very considerable ; and in attempting to reach the flower stem, I have been often drenched by upsetting the plant."—*Walsh's Notices of Brazil, 2nd vol. page* 306.

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56. **DENDRŌBĬŪM** *Paxtōnī ;* caulibus teretibus sulcatis, foliis ovato-lanceolatis acuminatis apice hinc obsoletè emarginatis, pedunculis bifloris, sepalis oblongis acutis lateralibus basi parùm productis, petalis latioribus obovatis acutis serrulatis, labello unguiculato ovato concavo indiviso villoso margine multifido fimbriato.

This beautiful new Dendrobium has orange-yellow flowers, with a deep brown spot in the middle of the lip. It is related to *D. chrysanthum*, from which it differs in having the petals serrated, and in the surface and margin of the labellum. It was found at Pundua, at the foot of the Khoseea hills of India, by Mr. John Gibson, at that time employed as collector to His Grace the Duke of Devonshire, and at whose request it was named after Mr. Paxton. It was sent me from Chatsworth in April last.

57. PHOLIDŌTĂ *articulātă*; Gen. et Sp. Orch. p. 38.

This plant has been introduced to Chatsworth by Mr. Gibson. It is of no beauty; its flowers are small and dirty white, with a little yellow. It is different in habit from the common *Pholidota imbricata*, the stem being jointed like an *Otochilus*, and not pseudo-bulbous.

58. PHĀIŬS *Wallĭchĭī*. Lindl. in Wall. pl. as. rar. t. 158.

Another addition to the Chatsworth collection, made by Mr. Gibson during his stay in India. The specimen sent me was a good deal damaged, but it appeared to be as stately and beautiful a plant as the common *P. grandifolius*.

59. TRIGONĪDĬŪM *tĕnŭĕ* (*Lodd. cat. no.* 582.); pseudobulbis ovalibus compressis monophyllis, folio ensiformi acutissimo scapo erecto tenui longiore, sepalis reflexis acutissimis, labello oblongo obtuso trilobo glabro apice reflexo medio appendice plano obovato emarginato adnato acuto.

A brownish purple species with a slender habit, introduced from Demerara by Messrs. Loddiges, with whom it flowered in May.

60. SCAPHYGLŌTTĬS *stellātă*; (Loddiges in litt.) pseudobulbis fusiformibus, foliis linearibus canaliculatis obtusis emarginatis, fasciculis sessilibus terminalibus, sepalis linearibus secundis patentibus petalis conformibus angustioribus, labello cuneato trilobo lobis lateralibus rotundatis intermedio acutiusculo.

This species nearly resembles Scaphyglottis violacea, (Bot. Reg. t. 1901) from which it differs in having larger flowers with spreading segments, and the lateral lobes of the lip as large as the middle lobe. It is a native of Demerara, whence it was obtained by Messrs. Loddiges.

61. ISŎTRŎPĬS *striātă*. (Bentham in Angel's Enum. pl. p. 28.)

This is a very pretty little greenhouse shrub. The stem is soft, and slightly downy, the leaves oval, apiculate, convex with a revolute edge, the flowers papilionaceous, clear orange yellow, with rich deep crimson forked veins, even more distinctly marked than those of Abutilon striatum. It is a native of Swan River, and was communicated by Robert Mangles, Esq. of Sunning Hill.

62. GOMPHOLŎBĬŪM *versĭcŏlŏr;* caule erecto, foliis breviter petiolatis 3-foliolatis, foliolis linearibus mucronatis glabris margine revolutis, racemo laxo paucifloro, calycis laciniis oblongo-linearibus cuspidatis extùs glabris intùs pubescentibus, carinâ glabrâ.

A smooth, neat-looking, climbing shrub, obtained by R. Mangles, Esq. from Swan River, where it appears to be common. The stems are round, erect, and smooth; the leaves have a firm texture; and the flowers are large, reddish-yellow changing to a deep chocolate red.

63. CHOROZĒMĂ *vărĭūm* (Bentham mss.); foliis subsessilibus subrotundo-cordatis undulatis spinoso-dentatis integrisque pubescentibus, racemis erectis multifloris foliis paulò longioribus, calycibus basi obtusis pilosis tubo dentibusque subæqualibus.

This is perhaps the handsomest shrub yet obtained from Swan River, whence seeds have been received both by the Horticultural Society and private individuals. Its foliage is compact, neat, and of a pleasant greenish grey colour; the flowers are gaily painted with orange and crimson. It is a greenhouse shrub of the easiest culture, and will make an admirable conservatory plant. It flowers from March through the summer months.

64. ACĂCĬĂ *cyanophȳllă;* phyllodiis lineari-lanceolatis vel elongato-oblongis undulatis obtusis glaucis basi valdè angustatis supra basin glandulosis, capitulis racemosis axillaribus phyllodio multò brevioribus, ovario glabro.

A fine new species of Acacia from Swan River, with long glaucous leaves, and a profusion of axillary racemes of yellow flowers. It was raised by the Horticultural Society from seeds presented by Mr. Smart, to whom we are also indebted for the introduction of the beautiful Chorozema varium. None of the long-leaved Australasian Acacias have such glaucous wavy leaves as this.

65. AGANĬSĬĂ *pulchĕllă.*

A very pretty new genus of Vandeous Orchidaceæ, sent by Mr. Brotherton from Demerara to Messrs. Loddiges. It has a creeping rhizoma, with distant slender pseudo-bulbs, each tipped by a single leaf, and cream-coloured delicate flowers, resembling those of some Maxillarias in form. The genus is distinguished from Maxillaria by the brown sepals not being oblique at the base, and by the nature of the pollen-masses; from Encnemis it differs in the form of the flowers, and in their regularity. It may be thus defined.

AGANISIA. Perianthium patens, æquale; sepalis lateralibus haud basi productis. Labellum liberum, mobile, indivisum, concavum, hypochilio parvo concavo, ab epichilio cristâ transversâ glandulosâ diviso. Columna erecta, semiteres, marginata, apice utrinque brachio acuto patulo aucta. Anthera ecristata. Rostellum elongatum. Pollinia 4, collateralia, per paria connata (oo oo) caudiculâ lineari, glandulâ parvâ ovali.——Rhizoma repens, pseudobulbosa. Pseudobulbi monophylli. Racemus erectus, radicalis, 3-4-florus, foliis multò brevior.——1. *Aganisia pulchella.* Pseudobulbi attenuati. Folia oblongo-lanceolata, acuta, plicata. Sepala et petala oblonga, acuta, ochroleuca. Labellum oblongum, obtusum, concavum, cristâ luteâ. Brachia columnæ obliquè bidentata, acuta.

66. GOVĒNĬĂ *lagenŏphŏră;* pseudobulbo ovato vaginâ lagenæformi utriculatâ incluso, petiolis tetragonis, racemo longissimo multifloro, labello ovato obtuso omninò glabro, sepalis petalisque obtusis.

For this very distinct and curious species of Govenia I am indebted to John Rogers, Esq. Jun. who imported it from Mexico, and has obligingly furnished me with the following note concerning it.

"Root a solitary tuber; the old not perishing until the new one is nearly full grown, but then dying away completely; about the size of a duck's egg, forming aboveground, and of a bright green, marked with the scars of three or four sheaths. The innermost sheath which surmounts the tuber is entire, and resembles a Florence flask in shape; it is about eight inches high, two to three in diameter at the base, and three-quarters at its throat; translucent, or semi-transparent, containing about one-third of a pint of water.

"Leaves two, opposite, lanceolate ovate, eighteen inches long by four to five broad; articulated with their petioles, just at the top of the pitcher. The petioles are acutely four-angled, sheathing, so that their transverse section is an equilateral rhomboid, with concave sides. The flower-stem rises from the bulb, within the pitcher, and *opposite* to the midrib of the outer leaf; about three feet high, bearing from forty to fifty flowers, which expand rapidly, and continue long in perfection, exhaling in the forenoon the odour of Habenaria bifolia.

"The pitcher is generally full of water, all the rain and dew which falls on the leaves being conducted into it; and it is apparently absorbed by the plant, as, if not replenished, it disappears more rapidly than evaporation would account for.

"The fibres are simple, proceeding from the base of the tuber, and have a tendency to rise and run on the surface of the ground. The plant evidently delights in water when growing, and is apparently a native of bogs or swamps."

Upon comparing this with Swartz's account of his *Cymbidium utriculatum*, no doubt can remain of that plant being another species of Govenia, differing from the present chiefly in having a pubescent scape, and succulent white flowers; it will therefore have to be added to this genus under the name of *Govenia utriculata*.

✓ 67. BRASAVŌLĂ *glaūcă;* foliis coriaceis oblongis obtusis planiusculis glaucis, spathâ uniflorâ, sepalis petalisque lineari-lanceolatis obtusis herbaceis, labello subsessili subrotundo acuto margine lobato, clinandrio dentato denti dorsali apice glanduloso.

A most curious Orchidaceous plant, obtained near Vera Cruz for the Horticultural Society by Mr. Hartweg. Its habit is so much that of a Cattleya that till it flowered it was expected to belong to that genus. It however proves to be a Brasavola, with very large flowers. A figure of it is in preparation for Mr. Bateman's noble work on the plants of this order from Mexico and Guatemala.

68. ONCĬDĬŪM *sanguĭnĕūm;* ebulbosum, foliis oblongis coriaceis dorso carinatis, scapo longissimo paniculato, sepalis subrotundis unguiculatis lateralibus basi connatis petalisque crispis sublobatis, labelli trilobi subcrispi vernicati lobis subæqualibus intermedio retuso cuneato, cristâ ovatâ convexâ corrugatâ, columnæ alis rotundatis sublobatis antherâ puberulâ.

A noble species of this showy genus, with the habit of Oncidium carthaginense, but with straw-coloured flowers stained with crimson blotches. It was imported from La Guayra by Messrs. Loddiges.

69. CYMBĪDĬŪM *bicolor.* Gen. et Sp. Orch. p. 164.

This has flowered with Messrs. Loddiges, who imported it from Ceylon. It proves to be a handsome species, with flowers like those of C. alorifolium, only streaked and stained with very deep crimson. The species is readily distinguished by having a sac at the base of the lip.

70. DIPLOPĒLTĬS *Hugelĭi.* Endl. enum. p. 13.

For a living specimen of this beautiful and most curious herbaceous plant I am indebted to Mr. Toward, Gardener to H.R.H. the Duchess of Gloucester at Bagshot. It is in its present state a foot and half high, with corymbose panicles of pink flowers, resembling those of a Cleome. It will be speedily figured in this work, when I shall endeavour to shew that it is an anomalous form of Capparidaceæ rather than of Sapindaceæ, to which order the learned Dr. Endlicher has referred it.

CIRCULATION OF THE BLOOD IN PLANTS.

Some years ago, Professor Schultz, of Berlin, called the attention of Botanists to the existence in plants of motion in a particular fluid, called by him latex, analogous to the blood of animals, through a system of vessels previously unexamined. At a later period he brought the subject before the Academy of Sciences of Paris, and his memoir upon the subject received the Montyon prize. Notwithstanding the exact manner in which Professor Schultz described this new circulating system, and the great importance of the facts he narrated, the question has attracted but little attention till lately, the common opinion among vegetable physiologists in this country having been, that there was some mistake in observations which had been made.

There can, however, be no doubt upon the subject, now that the circulation has been seen by so many persons in England, and the interest belonging to the inquiry is so great as to induce me to give the following abstract of a paper recently published upon this subject by Professor Schultz in the *Annales des Sciences, vol.* 10. *p.* 327, *new series.*

After adverting to the advanced state of the engravings with which the Academy of Sciences intend to accompany the original memoir, the printing of which was about to commence in September last, the author observes, that some persons have confounded the motion of cyclosis in the vessels dispersed through the cellular tissue beyond the focus of circulation, with the movement of rotation in the lower plants. In his Memoir he had made known two sorts of circulation quite distinct from each other; the one existing in *homorganic plants*, that is, in plants composed exclusively of a homogeneous cellular tissue, of which each cell represents and contains the whole vital actions of the plant: a circulation which, on account of the separate gyrating motion in each cell, he had called *rotatim;* the other peculiar to *heterorganic* plants, namely, to those provided with a double system of vessels united by a cellular system, in which reside exclusively the functions of formation: this last circulation is that to which he had confined the name *cyclosis*, because of the currents of fluid enclosed in vessels ramifying in a reticulated manner, so as to form circles linked to each other and cohering by anastomoses.

Both Brown and Amici, without attending to cyclosis, have published some interesting observations upon the motion of the juice in the cellular hairs of several heterorganic plants, (provided with laticiferous vessels); and Slack, in repeating the observations of Brown upon the hairs of *Tradescantia virginica*, established for the first time, in a positive manner, a comparison between this circulation in the hairs and the rotation in homorganic plants. Mr. Slack correctly observed that these hairs are not cellules composed of a simple membrane, but that they consist of a double tissue, the one exterior, the other interior, and that the circulation takes place between their two membranes. He also noticed that this motion in hairs does not merely consist of two currents returning upon themselves, but rather of numerous canals united by reticulating anastomoses. Mr. Slack therefore described a case of true cyclosis, but he was unacquainted with the nature and the different degrees of developement of the laticiferous system.

More recently these observations have been repeated by Meyen, but although one should have expected that an observer acquainted with the real nature of cyclosis, would, at the first glance, have distinguished that kind of circulation from rotation, Meyen, on the contrary, adopts the idea of Slack, and even pushes his false comparison still further, by attempting to refute the unquestionable accuracy of the observations made by the latter Botanist, when he stated that the circulation does not take place in the interior of a cell, but in the space between a double tissue. Most assuredly this refutation is altogether hypothetical. M. Meyen justly observed that it is impossible for a true rotation to occur in cavities enclosed within a double tissue; but instead of admitting the reticulated currents between such tissue to be referable to cyclosis, he preferred asserting that the observations of Brown and Slack are erroneous, although nothing can be more correct that their observations, their conclusions alone being false.

If we adopt the opinion of M. Meyen, we must allow that heterorganic plants, provided with a laticiferous system, have two sorts of circulation in the same individual, viz. cyclosis and rotation; without understanding what relation or connection there can be, either between the two circulations themselves, or between the two circulations and the system of spiral vessels. Such contradictions are inexplicable except upon the supposition that M. Meyen is unacquainted with the different forms, situation, extent, and the degrees of developement of laticiferous tissue; especially that of the capillary form, the sides of which are often not discernible in the midst of the cellular tissue, on account of their extreme tenuity and glassy transparency; and it is this circumstance that has so often prevented observers admitting, in a general manner, the existence of vessels for the conveyance of latex.

The author then proceeded to offer some observations upon two cases of cyclosis, of which drawings accompanied his paper. The first was *Commelina cœlestis;* of this a live stem was represented cut through the middle of a vascular bundle longitudinally. By the side of the spiral vessels a *focus of cyclosis* was indicated; this focus consisted of a bundle of laticiferous vessels, very delicate and filamentous, united together compactly in the form of a network with very long meshes, in which were seen currents of latex ascending and descending. Moreover, at the side of the focus, in the midst of the cellular tissue, the cyclosis was shewn in distinct currents, and the same thing was visible between the cells of a hair. The currents of latex, separated either in the cellular tissue of the stem, or in the hairs, were not separated in each cell, nor isolated in the cellular mass, but connected with the focus of circulation at certain points, so that all the latex circulating in the cellular tissue and hairs took its origin in the focus of cyclosis.

The second case was that of *Campanula rapunculoides*, the latex of which being milky, is better suited for observation. In the hair of this plant was shewn the same reticulated connection of the currents of latex as is observable in the interior of the plant, whether near the focus of cyclosis or in the cellular tissue. This circulation of a milky fluid was in all respects the same as that observed in *Commelina*, Tradescantia, and other plants whose latex is not milky. Thus all these acts of circulation take place in a system of vessels in the form of a very fine network surrounding the cells, and even traversing their interior in various directions; and this allows us at once to distinguish cyclosis from the rotation of homorganic plants. The former is never isolated in a cell, but always forms a part of a reticulated system belonging to several cells.

With regard to anastomoses in the laticiferous tissue, M. Schultz referred to his numerous drawings for abundant proof of their universal existence where cyclosis occurs. The knowledge of this plexus throws great light upon the direction of the currents of cyclosis in the interior of the parenchyma of living plants, where the sides of the vessels cannot be distinguished any more than in animals, in which doubts have been often entertained as to the existence of vessels in the system of the surface. It may be as impossible in plants as in animals to separate the vessels in every part, but there is no reason why we should not take a part for the whole in the one case as well as the other.

In conclusion, the author expressed his belief that a general law in the organization of plants, as in animals, constitutes two great divisions in the vegetable kingdom—the homorganic and the heterorganic—and that it is chiefly from variations in the system of circulation that those internal changes of organization takes place, the results of which are the different grades of developement in the natural divisions of the vegetable kingdom; while in the animal kingdom it is principally on the nervous system that the general types of natural divisions are founded.

VEGETATION OF THE CAPE OF GOOD HOPE AND VAN DIEMEN'S LAND.

Extract from a letter written by a Lady at Hobart Town in January, 1839.

" How I thought of you at the Cape, that Paradise of flowers! though the first bloom was over on our arrival, yet enough was left to shew what had been, nor without seeing can you imagine the profusion; there are actually no weeds. Our favourite little blue Lobelia is the chickweed of the place, the ditches and all damp places are filled with Cape Lilies, Heaths of all colours, the Erica, I believe coccinea, growing very high, Diosmas, Crassulas, &c. &c. I saw a great deal of the Cape, we were above a fortnight there, and travelled above a hundred and eighty miles into the interior. With the general appearance of the country I was disappointed, there are no trees. The *silver tree*, a Protea, is the highest indigenous plant that I saw. There are oaks in and about Cape Town, Constantia, Wyneberg, &c. and indeed wherever a house is built, a few trees are planted for shade, but the country for miles has nothing higher than heath, and for the greater part of the year is sterile looking. But in the season the whole face is covered with flowers; and such a face! fancy acres of heaths, of all colours, interspersed with Gladioles, Ixias, Watsonias, Babianas, Lachenalias, &c. without end, all growing and flourishing in their native luxuriance. Some bunches of Mesembryanthemums near Sir Lowry Cole's pass were actually too bright to look at. I lived in one constant whirl of delight, that extacy in which we behold perfection. I could not see fast enough. Most of the Ixias were out of bloom, but their remains were like patches of a hay-field in seed, only the stems closer together. Myrtle hedges were eight and ten feet high; the one I saw at Sir John Herschell's must have been more, and as close and substantial as our best holly hedges. We visited Villette's, and Baron Ludwig's garden, but where the whole country is a garden, these were of less interest. The Melia Azedarach, with its sweet lilac blossoms, is a beautiful and ornamental tree which I did not see wild. We visited the Constantias; Great Constantia is beautiful, the soil is white, and looks like lime and sand intimately mixed. I thought of our gardener's recommendation of lime rubbish for vines.

To the Cape, Van Diemen's Land is a direct contrast.

This is a country of hills, fringed to the very top, and perhaps about the thickest vegetation in the world. All is evergreen, and one dense mass of gloom. At first sight it is sombre enough, but like a dark beauty it has its charms. The wood is chiefly " gum" (Eucalyptus), growing to an immense height, and throwing its long white arms about in a wild Salvator style. The young "gums" are beautiful, and their new shoots of reddish brown lightening into a paler hue, and deepening into myrtle green, with the light new shoots of the " wattle" (Acacia), give a rich beauty of colouring, delightful to the eye of a painter. Nature here must be painted to the life, there is nothing to soften.

" There is a harshness and dryness in the texture of vegetation here that is very peculiar; even their kangaroo grass (Anthistiria australis), which is considered so nourishing, is hard and hairy, or rather wiry. The flowering shrubs are extremely pretty, but the flowers are very small. The Epacris impressa is in great quantities every where ; but Heaths have not as yet been successfully cultivated here, and there are none native. The soil is very dry. But cultivation of any kind is only creeping in ; a Horticultural Society has this last year been formed at Launceston, and it is to be hoped knowledge and emulation may thus be excited ; hitherto sheep, sheep, from one end of the country to the other, with little more cultivation than each farm requires, land cheap, and labour dear, have caused this state of things : but the minimum price of land is now raised, and most of it is so bad that its value is far below that. Settlers must now rent from the great landholders, and the resources of the country must be made available. With science and judgment every thing and any thing may be done here : wherever English trees are planted there they flourish, but they are few and far between. The Sweetbriar is now seen in the woods, and grows to an immense size. The quantity of flowers and fruit, such as they are, is beyond belief, but there are none of the best kinds. Think of grafts here bearing the first year : an earnest of what might be. I succeeded in bringing here alive, but in bad health, the Lilies of the Valley which you gave me; four leaves are green, the only morsel in the Southern hemisphere."

71. DICHÆĂ *ochracea;* foliis linearibus acutis carinatis, pedunculis foliorum ferè longitudine, bracteâ cucullatâ ovarii longitudine, sepalis petalisque oblongis acutis, labello subrotundo rhomboideo sessili, columnâ pilosâ, clinandrio membranaceo-marginato, antherâ bigibbosâ.

A small Demerara plant, with narrow leaves, and pale yellow-ochre-coloured flowers. It is next *D. graminoides*, which differs in having smaller flowers with very short peduncles, and both shorter and flatter leaves. Messrs. Loddiges obtained it from Demerara.

72. GREVILLĒĂ *Thelemaniānă*; foliis trifido-pinnatifidis, laciniis linearibus subtus bisulcatis submucronatis junioribus appressè subpubescentibus, racemo denso. *Hugel in litt.*

A beautiful New Holland shrub, with numerous racemes of crimson flowers, and narrow pinnatifid leaves. It has recently been raised at Vienna by Baron Hugel, to whom I am indebted for a knowledge of this and several other rare species now existing in his very valuable collection. It belongs to Brown's section of Grevillea proper.

73. CONŌSTY̆LĬS *jūncĕă;* perigonio intus glabro, scapis indivisis capitulo vix longioribus, foliis teretiusculis lævibus. *Hugel in litt.*

A rigid herbaceous plant, with leaves from six inches to a foot long, at the base of which grow heads of campanulate erect flowers. The tube of the perianth is yellowish green, covered with harsh hairs; the limb is divided into six, equal, acuminate segments, deep yellow at the base, whitish at the point, the stamens are six, and inserted equally into the throat of the perianth. It is a pretty greenhouse herbaceous plant, found on the south coast of New Holland by Baron Hugel, and raised at Vienna, where it has flowered.

74. ACĂCĬĂ *cuneātă.* Benth. in Hugel's enumeratio, p. 42.

This plant, from the Swan River, has been raised at Vienna by Baron Hugel. It appears, from a drawing that has been sent me, to have glaucous wedge-shaped truncated phyllodia, and solitary yellow capitula, whose peduncle is nearly half the length of the leaf. It does not entirely agree with the definition given by Mr. Bentham, in the work above quoted, both the angles of the phyllodia being tipped with a spine, the midrib forking above the middle, each of its arms being directed towards an angle, and the peduncles being much longer than the stipules, as well as much shorter than the phyllodia.

75. THYSANŌTŬS *isanthērŭs.* R. Brown Prodr. 139.

This fine species has lately flowered at Vienna with Baron Hugel. It is a greenhouse herbaceous plant, with very short leaves, rushy stems, 1-1½ foot high, and large purple-fringed flowers. It is one of the handsomest of the genus.

76. ONCĬDĬŪM *unicōrnĕ;* pseudobulbis ovalibus compressis diphyllis, foliis oblongo-linearibus recurvis, racemo composito ramis divaricatis rectiusculis, sepalis lateralibus in unum concavum emarginatum connatis, petalis obovatis undulatis, labelli lobis lateralibus nanis intermedioque emarginato rôtundatis, disco basi transversè elevato anticè cornu ascendente compresso subfalcato acuto, alis columnæ angustis obsoletis.

This is a pretty little species, with a compound straggling raceme of pale yellow flowers. The singular horn on the lip, to which it owes its name of the "Unicorn," at once distinguishes it from all species previously described. Messrs. Rollissons imported it from Rio, and flowered it three weeks since.

77. EPIDĒNDRŪM *Candōllĕī;* pseudobulbis sphæricis, scapo paniculato, sepalis petalisque obovato-oblongis, labelli liberi trilobi cucullati lobo medio crispo acuminato, disco elevato calloso sulcato pubescente.

The first knowledge I had of this plant was from M. Alphonse DeCandolle, who shewed me a drawing of a very imperfect specimen that had flowered at Geneva, and which I took for a variety of Ep. *asperum.* Subsequently the same species has flowered with Messrs. Loddiges, and I find that it is distinct. The flowers are dull brown, with a dull yellow lip, striped with the same colour. It is a Mexican plant.

78. GLAUCĬŪM *rūbrūm.* DC. prodr. I. 122.

This plant, a native of Asia Minor, and of Rhodes, is now a common biennial, under the name of *G. elegans.* It has handsome poppy-red flowers, not so large, but much richer than those of the common horned poppies.

79. ERY̆SĪMŪM *Perofskiānūm.* Fischer & Meyer Ind. iv. p. 36.

This very pretty hardy annual plant, with bright orange sweet-scented flowers, has been raised in the garden of the Horticultural Society, from seeds collected in the north of

India by Dr. Falconer. It was originally obtained from Caubul by some of the Russian emissaries in that kingdom, and sent from the St. Petersburgh garden to England.

80. PAPĀVĔR *amœ̄nŭm;* caule simplici glaberrimo, foliis glaucis oblongis sessilibus pinnatifidis serratis, capsulâ obovatâ stipitatâ glabrâ, stigmate 7-radiato.

A beautiful annual poppy, raised by the Horticultural Society from seed sent from the north of India by Dr. Falconer. Its leaves are smooth and glaucous; its petals a most brilliant vermilion pink with a whitish base.

81. PIMELĒĂ *prostrātă.* Vahl. enum. 1. 306.

This is a little shrub, with small decussating glaucous smooth leaves, hairy branches, and little lateral heads of white flowers, called in the gardens *P. novæ zelandiæ.* It is said to be a native of arid mountains in New Zealand. Its appearance is neat and pretty, but by no means showy.

82. MĀLVĂ *mauritiānă.* Linn. sp. pl. 970.

This beautiful hardy annual, a native of Algiers, has lately been recovered by the French, who have dispersed it under the name of the Zebra Mallow. It has pale blush flowers, deeply stained with rich purple veins. The plant usually sold in the seed-shops under the name of M. mauritiana is only a large state of M. sylvestris; and this, beautiful as it is, seems to be nothing more than a variety of that species.

83. SAPONĀRĬĂ *perfoliātă.* Roxb. hort. beng. 34.

An annual, with small pink flowers of very little beauty. It has been raised in the garden of the Horticultural Society from seeds collected in the north of India by Dr. Falconer.

84. CENTAURĔĂ *pūlcrā.* DC. prodr. vii. 578.

This most beautiful annual has been raised in the garden of the Horticultural Society from seeds collected in the north of India by Dr. Falconer. The leaves are narrow and hoary. The scales of the involucre are green, bordered with a silvery pectinated margin; the flowers are the deepest blue in the circumference and violet in the centre. No plant can be more worthy of cultivation as a hardy annual.

85. VERŎNĬCĂ *formōsă.* R. Br. prodr. 290.

This pretty small-leafed shrub, white-flowered, evergreen and hardy, inhabiting the highest mountains of Van Diemen's Land, has lately flowered in the garden of the Horticultural Society. Its power of existing in water only is quite extraordinary; I have a specimen now before me, of which a twig placed in a vial of water has lived six weeks, ripened its seeds, and is now as fresh and healthy as it was at first.

Genera et Species Gentianearum, adjectis observationibus quibusdam phytogeographicis; auctore A. H. R. Grisebach, M.D. 8vo. Stuttgart and Tubingen, 1839, pp. 364.

The extensive order of Gentianaceous plants, notwithstanding the difficulty or even impossibility of cultivating many of the species, is very interesting to the Botanist, both on account of the beauty and variety of a large proportion of the genera, and because of the difficulty of determining their limits and of reconciling the discordant opinions of systematical writers upon that subject.

When, therefore, Dr. Grisebach undertook the elaboration of the order, the result of which is now before us, his task was one of no common kind, and had he addressed himself to it with less patience, or fewer materials, or a less clear perception of the true principles of generic limitation, his work might have been a useful compilation for other Botanists, but could not have taken the high station among philosophical systematical writings, to which this has unquestionably a claim.

The materials at the author's disposal have been the rich herbaria of Chamisso, Kunth and other Berlin botanists, the miscellaneous collections of Sir Wm. Hooker and other strangers, the Indian species of Wight and Arnott, the Cape herbarium of Ecklon, and other collections of considerable importance.

The natural character of the order, as regards the organs of both vegetation and reproduction, is given at considerable length, and is followed by some interesting morphological observations. These relate to the anatomy of the nodes of the stem, the inflorescence, and the organization of the flower. The author distinguishes two kinds of nodes in dicotyledonous plants, one the *nodus integer*, from all parts of which the fibrovascular tissue proceeds into the leaf; the other the *nodus partialis*, where the fibrovascular tissue passes into the leaf at one point only. The nodus integer is universal in the order, and Dr. Grisebach considers that by this character Gentianaceæ are certainly known from Cinchonaceæ, Spigeliaceæ, and others.

The organization of the flower of *Swertia perennis* and *Gentiana lutea*, is traced from the earliest period when it is distinctly visible up to the state of maturity. He finds the petals originally distinct, although eventually consolidated into a monopetalous corolla; the stamens distinct from the corolla, and exactly like nascent leaves, although eventually adherent to the petals; and the carpels also distinct; the consolidation of all these parts takes place subsequently, and when the flower bud is about a line long. The placentation of Gentiana lutea is from the beginning marginal to a carpel, and consequently at variance with the modern views of Schleiden and Schykofsky, who deny the truth of the theory that the origin of ovules is from the margin of carpellary leaves, and refer all placentation to the growing point.

The author next considers the limits, principles of division, and affinities of the order; he admits the small natural order Columelliaceæ, and proposes a new order (*Bolivariaceæ)* to include Bolivaria and Menodora. The geographical distribution of the order is considered at length, and at the same time several general questions of interest in Botanical geography are discussed at considerable length. It is found that in all 343 Gentianaceous plants are known, and that the only parts of the world in which some one or other does not occur, are some islands in the Pacific, the tropical parts of New Holland, Timor, Sumatra, and some other parts of the Polynesian Flora, the deserts of Africa, the littoral of Venezuela; and that they have scarcely been found on the mountains of Southern Europe. Of the species, 210 are tropical and 133 are extratropical.

The order is divided into 40 genera, distributed through seven tribes; the detailed account of which is preceded by an excellent analytical table of the genera, tribes and species. Of Exacum 13 species are enumerated, of the beautiful genus Sabbatia 11, of Erythræa 17, of Lisianthus 33, and of Gentiana, to which are reduced most of the genera separated by

Professor Don and some other modern Botanists, there are 125 species. Professor Don's genera Ophelia and Agathotes are combined, and 15 species of the two are described. Finally, our wild Villarsia nymphoides is referred, with some others, to the genus Limnanthemum of Gmelin, distinguished from the true Villarsias by its indehiscent fruit.

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85. DENDRŌBĬŪM *bicamerātūm;* caulibus fusiformibus, foliis lineari-lanceolatis apice obliquè bidentatis, pedunculis lateralibus squamatis 4-floris, floribus concavis subcarnosis, sepalis petalisque subrotundo-ovatis acutis, labelli trilobi laciniâ intermediâ rotundatâ apiculatâ carnosâ lateralibus triangularibus acutis breviore, columnæ facie excavatâ semibiloculari.

A native of the north of India, whence it was brought by Mr. Gibson for the Duke of Devonshire. I am indebted to George Barker, Esq. of Birmingham, for a specimen. The stems appear to grow nearly upright, and are rather short, fusiform and furrowed when old. The flowers are a little smaller than those of Maxillaria stapelioides, and like them in form; their colour is dull yellow, spotted and streaked with purple. In the specimen I examined the flowers grew in fours, on a very short peduncle, closely covered with ovate concave bracts, speckled with purple. The excavation of the face of the column, and its division into two cells are remarkable.

86. GONGŌRĀ *nigrītă;* hypochilii convexi cornubus lateralibus ascendentibus abbreviatis aristis setaceis, epichilio acuminato apice uncinato breviore.

This is much the darkest of the Gongoras, the appearance of the flowers being like that of the deepest puce-coloured velvet. It is very nearly the same as G. atropurpurea, but the lower half of the lip is convex not concave, longer than the upper half not shorter, and the horns at its sides are very short. It was imported from Demerara by S. Rucker, Esq. Jun. who informs me that the smell is quite different from that of G. atropurpurea.

87. SPIRǢĂ *cuneifŏlĭă. Wallich cat. no.* 699. (S. canescens. *Don prodr. fl. nep.* 227. *De Cand. prodr.* 2. 544.

This is a pretty and very hardy shrub, found in the cold parts of India, and recently introduced by the Honourable Court of Directors of the East India Company, by whom seeds were given to the Horticultural Society. It forms at present an erect bush, with downy angular arching stems, from which proceed numerous short, stiff branches, terminated by close corymbose panicles of downy white flowers. The petals are round, entire, and nearly flat. The leaves are small, thick, downy, wedge-shaped, and either crenated near the point or undivided; they are bright green on the upper side, and glaucous beneath, with nothing of a canescent appearance, which is only visible when they are dried; wherefore, independently of all other reasons, Dr. Wallich's name is to be preferred to that of Professor Don.

88. SPIRÆĂ vacciniifŏlĭă. *Don prodr.* 227. *DC. prodr.* 2. 546.

This has also been obtained from the same quarter as the last; and is equally hardy. It forms a small shrub, with small brown, nearly smooth branches, leaves ovate, serrated, sometimes unequally, light green above, glaucous beneath, and small compact corymbose downy panicles of white flowers, with flat roundish petals.

89. SPIRÆĂ *laxiflōră;* fruticosa, ramis debilibus teretibus velutinis, foliis glabris ovatis crenatis longè petiolatis subtùs glaucis, paniculis laxis villosis, petalis reflexis.

With the two last was received this third species, which has hitherto been undescribed. It resembles S. vacciniifolia in the form of the leaves, and the colour of their underside, but they are long-stalked and rather glaucous above, and the flowers are arranged in large, loose, shaggy panicles; the petals are moreover reflexed. The species differs from S. fastigiata, *Wall.* in the leaves having much longer stalks, being more ovate, with crenatures rather than taper-pointed serratures, and in the panicles being much more lax.

90. MEDICĀGŎ *clypeātă;* foliolis rhombeis obovatis apiculatis versus apicem denticulatis, stipulis pinnatifidis, pedunculis subtrifloris, leguminibus depressis biconvexis pentacyclis venosis margine tenuibus lævibus.

Quite a new form of Medicago, allied to M. rugosa, imported from the north of India by the East India Company. It has no beauty, but it is curious on account of the singular form of the fruit, which approaches in appearance those species called "Snails" in the seed-shops.

91. PHĀIŬS bĭcŏlōr. *Lindl. g. et sp. orch. p.* 128. *Sertum Orchidaceum, t.* 25.

This, which is one of the handsomest species in the fine genus to which it belongs, has flowered with Messrs. Loddiges, who imported it from Ceylon. Its sepals and petals are, in that island, a very bright deep red, and the lip is yellow; but owing to unhealthiness or some other cause the colours of Messrs. Loddiges' plant were by no means of their native brilliancy: for it is certain that they are fully as bright and rich as in the figure in the Sertum Orchidaceum.

92. GOODYĒRĂ *rubicūndă* (Neottia rubicunda. *Blume Bijdr. p.* 408).

This plant has flowered with Messrs. Loddiges, who received it from Manilla, from Mr. Cuming. It has the habit of Goodyera procera, but is smaller; the scape and spike are rather more than a foot high, downy, and of a dull cinnamon brown. The flowers are also downy and of the same colour, with the exception of the lip, which is white, and densely fringed inside with glandular hairs. The whole of Blume's 3rd section of Neottia appears to belong to Goodyera.

93. MAXILLĀRĬĂ *lentiginōsă;* bracteis latè ovatis acuminatis, labelli lobo medio ovato-oblongo obtuso, cristâ transversâ medio processu quadrato tridentato auctâ, antheræ apice incurvo; alioquin *M. stapelioidi* similis.

A plant very like Maxillaria stapelioides; but the sepals are more acute, the purple spots redder, more distinct, and less run into bars; the lip is of the same colour as the petals, and its transverse crest has a square three-toothed process in the middle. Imported from Brazil by Messrs. Loddiges.

94. VANDA *congēstă;* foliis oblongis coriaceis apice obliquis mucronulatis, spicis capitatis subsessilibus, perianthio carnoso fragili, sepalis oblongo-linearibus petalisque lineari-spathulatis obtusissimis, labello oblongo limbo subdeltoideo crenulato papilloso basi excavato pubescente, columnæ angulis mucronatis.

A small yellow and brown-flowered species from Ceylon, communicated by Messrs. Loddiges. It is near V. multiflora in the structure of the flowers, but the dense inflorescence and bearded sac of the labellum are obvious marks of distinction.

MEXICAN PINES.

Among the collections of seeds formed in 1838 in the mountainous districts north of Mexico, by Mr. Hartweg, for the Horticultural Society, are many species of Pinus, among which six are quite new. As the Society is about to distribute the seeds of these plants, it is desirable that they should in the first instance be described, in order that no confusion may be hereafter introduced among the garden plants. They may therefore bear the following names.

95. PINUS *Hartwĕgĭī;* tetraphylla, foliis secundariis angustissimis primariis membranaceis elongatis scariosis, strobilis pendulis oblongis obtusis aggregatis; squamis apice transversis medio depressis umbonatis ecarinatis umbone recto rotundato, seminibus subrotundis cuneatis alâ testaceâ 4-plò brevioribus.

The cones are about four inches long, and about two inches or rather more in diameter, of a clear greyish brown, and as broad at the one end as the other. The branches are very stout, like those of P. palustris. The leaves are almost invariably in fours, and rather more than six inches long. Mr. Hartweg sent it from the "Campanario," where he found it forming a tree 40 or 50 feet high, and beginning to appear where the Oyamel, or Abies religiosa, ceases.

96. PINUS *Devonĭānă;* pentaphylla, foliis longissimis, ramis crassissimis, strobilis pendulis solitariis corniformibus obtusis: squamis apice rotundatis rhomboideis lineâ transversâ paulò elevatâ opacis griseis medio abruptè umbonatis obtusis lævigatis, seminibus obovatis alâ nigricante quintuplò brevioribus.

This noble species is the "Pino blanco," or "P. real," of the Mexicans. Mr. Hartweg describes it as a hardy tree from 60 to 80 feet high, found on the Ocotillo between Real del Monte and Regla. The cones are from nine to ten inches long, curved, about three inches in diameter near the base, and tapering till they are not more than one inch and three-quarters broad at the point. The young shoots are nearly an inch in diameter, and look very like those of Pinus palustris. It is worthy of bearing the name of His Grace the Duke of Devonshire, whose arboretum at Chatsworth will it is to be hoped be soon augmented by this truly regal plant.

97. PINUS *Russelliānă;* pentaphylla, foliis longissimis, strobilis elongatis horizontalibus subcernuis verticillatis rectiusculis sessilibus: squamis apice rhomboideis pyramidatis rectis obtusis, seminibus oblongis alâ nigricante 4-plò brevioribus.

Found on the road from San Pedro to S. Pablo, near Real del Monte. It differs from P. Devoniana in its cones being shorter, not pendulous, nor curved, with the ends of the scales distinctly pyramidal. The cones are from seven to eight inches long, about two inches wide near the base, and almost acute at the upper end. I trust to be excused in the eyes of His Grace the Duke of Bedford, if I propose to attach the name of Russell to this fine species.

98. PINUS *macrophȳllă;* pentaphylla, foliis longissimis, strobilis rectis horizontalibus ovatis elongatis solitariis: squamis apice transversis rhomboideis runcinatis, seminibus subrhomboideis rugosis alâ testaceâ 4-plò brevioribus.

The leaves of this are from fourteen to fifteen inches long; the cones grow singly, and are about six or seven inches long, about three inches broad near the base, and taper gradually into an obtuse point. The species differs from P. Russelliana in the longer leaves and shorter and stouter cones, the ends of whose scales are strongly hooked backwards. Mr. Hartweg found a single tree, of small size, on the "Ocotillo."

99. PINUS *pseudostrōbŭs;* pentaphylla, foliis tenuissimis glaucescentibus, strobilus ovalibus verticillatis horizontalibus; squamis apice rhomboideis pyramidatis erectis rectiusculis lineâ elevatâ transversâ, seminibus ovalibus alâ nigrescente quadruplò v. quintuplò brevioribus.

Mr. Hartweg describes this as allied to Pinus Devoniana, but quite distinct and resembling P. Strobus in habit; he found it very common at Anganguco, about 8000 feet above the sea. The leaves are fine and glaucous, like those of the Weymouth Pine. The cones are about four inches long, by an inch and half in breadth over the middle.

100. PINUS *apulcēnsĭs;* pentaphylla, foliis tenuibus abbreviatis ramisque glaucis, strobilis pendulis verticillatis ovatis acutis: squamis rhomboideis pyramidatis rectis nunc elongatis medio constrictis, seminibus ovalibus alâ lineari quadruplò brevioribus.

The short leaves and very glaucous shoots distinguish this, independently of the ovate cones, covered closely with pyramidal elevations, which are sometimes prolonged and contracted in the middle, especially those near the points of the cones. The leaves are not more than six inches long, the cones are about four inches long, and very regularly ovate. Mr. Hartweg found it in ravines near Apulco growing fifty feet high.

101. CUPRESSUS *thurĭfĕră* (Schlechtendahl);

Found near Anganguco and Tlalpuxahua, forming a tree 50 to 60 feet high;

102. JUNĬPĔRŬS *tetragōnă* (Schlechtendahl);

a beautiful shrub, with quadrangular branches and small glaucous fruit, making a bush from four to five feet high, on the road from Real del Monte to Chico;

103. JUNĬPĔRŬS *flāccĭdă* (Schlechtendahl);

a beautiful small tree from 15 to 20 feet high, with weeping branches and glaucous fruit as large as a hazel nut, from the neighbourhood of Regla; and

104. JUNĬPĔRŬS *mexicānă* (Schiede);

an upright shrub or small tree, with large greenish, irregularly oblong fruit, producing a resin like Sandarach in the Real del Monte mountains; have also been received by the Society, and their seeds are in the course of distribution to the Fellows.

Notes upon the Plants that produce some of the fœtid gum-resins of the Materia Medica.

There is so much uncertainty in the source from which the fœtid gum resins are obtained, the origin of *Galbanum* and *Sagapenum* being unknown, that of *Asafœtida* disputed, and that of *Ammoniacum* dependent upon evidence which requires confirmation, that any new information upon this subject is of interest. Through the kindness of the Honourable W. F. Strangways, I have been put in possession of some new evidence collected in Persia by Sir John McNiell, and it is so satisfactory as to deserve to be made known.

105. *Ammoniacum* is certainly produced, as Professor Don states, by Dorema ammoniacum, it having been found

sticking in abundance to the inflorescence of a specimen gathered in flower, between Ghorian and Khaff. It is undoubtedly the secretion of the plant, and has been obligingly identified for me by Mr. Pereira. It is however deserving notice that a lump of Gum Ammoniac itself, from the neighbourhood of Ghorian, was mixed with numerous fruits of a Ferula, but not with one of the Dorema.

106. The discrepancy between the statements of Pallas and Kæmpfer, as to the origin of *Asafœtida*, is not settled; Sir J. McNiell's collection not answering to the statements of either. Three samples of Asafœtida fruit were sent home, none of which belong either to F. persica or F. asafœtida; one of the samples is near the former species, but the fruit is broader and larger, corresponding with it however in thickness, and in the almost total want of a thin margin; the other two samples are different from each other, as well as from fruit formerly sent from Persia, and described by me in the Flora Medica, No. 97, as those of the true F. asafœtida; they more resemble the F. Hooshee, No. 100 of the same work, but are larger, and have their dorsal vittæ much elevated and undulated. From this I think we must conclude that Asafœtida is collected indiscriminately from various species of Ferula found wild in Persia, and that it is not the produce of any one species in particular.

107. Of *Galbanum*, what has been thought to be the fruit has been described by Professor Don, from specimens found sticking to samples of the imported drug; but there is nothing to shew that the drug and the fruit belonged to each other, and I think that the evidence now in my possession renders it probable that there was no connection between the two. Sir J. McNiell sent home specimens of a plant called a 2nd sort of ammoniacum, gathered near Durrood, June 27, 1838, to the branches of which are sticking lumps of a pale yellow waxy gum resin, which I took for Galbanum, and upon which Mr. Pereira, who has examined it, makes the following remark:—"It is not asafœtida; it is not ammoniacum; neither does it accord with either galbanum or sagapenum, as met with in the shops or in my museum. Both these substances, however, vary somewhat in their properties, and therefore I could not deny the identity

of your sample with some specimens of either of them. Of the four fœtid gum resins above referred to, it certainly approaches Galbanum the nearest."

From this it is I think clear, that the species in question, if not the origin of Galbanum, must be very near it. Now its fruit has no resemblance to that called Galbanum by Professor Don, and in fact the plant itself is new to science. At first I took the specimens for a new kind of Opopanax, supposing my fruit to be very young; for they are in no small degree like that of Opopanax shortly after flowering; but when I found them containing solidified albumen, no doubt could be entertained of their being in nearly a perfect state. This plant, instead of being a neighbour of Ferula and Opopanax, must be stationed somewhere in the neighbourhood of Smyrnium, from all whose related genera it is essentially distinguished by the surface and vittæ of the fruit. The following name and character are what I would propose for its future designation.

108. OPÖIDIA.

Flores polygami. Calyx obsoletus, 5-dentatus, æqualis. Petala ovata, acuminata, acumine inflexo. Fructus teres, ovalis. Mericarpia jugis 3 primariis angulos obcuros referentibus: valleculis planis. Vittæ jugorum primariorum solitariæ minutæ, secundariorum maximæ solitariæ, commissurales duæ maximæ duæque obsoletæ. Semen involutum.——Herba erecta, minutè scabra. Folia lata bipinnata. Umbellæ terminales et laterales compositæ. Involucrum universale subnullum, partiale polyphyllum. Flores pallidè flavi.

Opoidia *galbanifera.* Hab. in Persia, provinciâ Khorasan prope Durrood. Folia bipinnata, bijuga, petiolo glabro, cæterùm scabriuscula; foliolis oblongis, obtusis, serrulatis, decurrentibus, Opopanacis facie. Caulis elatus, robustus, glaber; umbellis quibusdam sessilibus in axillâ ramorum, quibusdam terminalibus pedunculatis; radii umbellarum umbellulis 3-plò longiores. Invol. univ. nullum, aut parcum, foliolis ovatis membranaceo-marginatis; partiale polyphyllum, conforme. Umbellulæ patulæ, pedicellis fructu duplò longioribus. Petala albida, ovata, parva, acumine lineari acuto inflexo. Discus ♂ clypeatus, decagonus, fere astylus. Fructus junioris teretis ovalis basi paulò angustati juga primaria anguli tantum obsoleti, quorum lateralia marginantia, valleculis planis. Albumen intùs sulcatum, dorso altè exaratum ad vittas 4 maximas recipiendas; vittæ sub jugis minimæ in medio pericarpii; commissurales duæ maximæ ante sulcum albuminis, duæ minimæ in medio inter axin et marginem.

109. ANGRǢCŪM *armenĭăcūm;* caulescens, foliis distichis canaliculatis apice obliquè et acutè bidentatis, spicis lateralibus horizontalibus secundis, sepalis ovatis, petalis linearibus, labelli 3-lobi laciniis lateralibus acuminatis intermediâ triangulari longioribus, calcare pendulo clavato basi compresso calyce duplo longiore.

This very singular plant is a native of Sierra Leone, whence it has been obtained by Messrs. Loddiges. Its flowers are of a uniform apricot-colour, small, secund, and closely arranged in a horizontal lateral spike. The habit is that of a Saccolabium. It is very distinct from all that have before been seen, but has some affinity with Angræcum mystacinum. The spur is twice as long as the calyx, compressed at the base, and then inflated a little so as to appear clavate.

110. MALACHADENIA (Vandeæ).

Flos resupinatus. Sepala lateralia connata, apice reflexa libera, galeam formantia; dorsale cordatum acuminatum. Petala minima, squamæformia, rotundata. Labellum carnosum, margine revolutum, basi mucronatum, cum pede elongato columnæ sepalis lateralibus galeatis adnatæ articulatum. Columna antice bicirrhosa, basi longè productâ, stigmate lineari oblongo. Anthera 2-locularis, decidua. Pollinia 2, ceracea, sessilia, glandulâ molli, cubicâ, nudâ.——Herba repens, pseudobulbis monophyllis, scapo radicali, floribus carnosis galeatis.

MALACHENIA *clavata.*

Rhizoma repens. Pseudobulbi subglobosi, monophylli. Folia angustè ovalia, carnosa. Scapus radicalis, foliis ter longior, erectus, teres, apice clavatus, subbiflorus; axi spicæ articulatâ: internodiis clavatis. Spica terminalis, pauciflora. Bracteæ membranaceæ, ferrugineæ, reflexæ. Ovarium brevissimum. Flores obscurè virides purpureo maculati. Sepala lateralia acuminata, apice revoluta, basi obscurè semisagittata: supremum subcordatum: sinu lato inter sepala. Petala squamiformia, rotundata, obsoleta. Glandula polliniorum mollis, subcubica, cinnamomea, cui pollinia leviter annectantur.

This very singular plant was given to Mr. Bateman by Mr. Wm. Hooper of Lambeth, who received it from Rio in 1836. It is a remarkable genus, resembling Megaclinium in some respects, but belonging in reality to Vandeæ, among which it is marked by the nearly total absence of petals, the cirrhate column, and the soft fleshy cinnamon-coloured gland, to which a pair of reniform pollen-masses are slightly attached. In this division of Orchidaceæ it is uncertain where it must stand; probably other genera still undiscovered will connect it with the system better than can at present be done.

I. September, 1839.

The scape is about nine inches long; the flowers are fleshy, dull green, slightly spotted with purple. The labellum is an ovate fleshy body with revolute edges, concave only on the upper side, and with two little mucronate processes at the base, one on each side.

111. SENĒCĬŌ *odorātŭs*. *Horn. hort. hafn.* 2. 809. *DC. prodr.* vi. 371.

Why this is called "sweet-scented" is unintelligible, for it has no smell. It is a glaucous herbaceous plant, with simple terete stems, rising in a crowd from the crown of the root, and growing one and a half to two feet high. The leaves are firm like those of an evergreen bush, oblong, toothed, auriculate, and covered with a thick blue bloom, which however readily rubs off, when they become bright green and shining; they are not however acuminate, as DeCandolle describes them, in the garden plant. The flower-heads are yellow, small, scentless, rayless, and arranged in corymbose panicles; and although destitute of individual beauty, they form rather a pretty effect by the neatness of their figure, their abundance, and the contrast of their colour with that of the leaves. I leave this plant in Senecio, observing, however, that its receptacle is alveolate, and the alveoli bordered by a deep irregularly toothed border, which gives the receptacle the appearance of being paleate. The plant has flowered in the garden of the Horticultural Society, where it has been raised from seeds collected in the south-east interior of New Holland by Major Sir Thomas Mitchell.

112. EURȲBĬĂ *glutinōsă;* fruticosa, undique puncticulis elevatis cinereis scabriuscula, ramis subangulatis glutinosis calvis, foliis linearibus utrinque viridibus obtusis margine rotundatis nec revolutis, pedunculis corymbosis monocephalis foliorum longitudine, invol. cylindracei squamis ovato-linearibus apice obtusis herbaceis margine membranaceis, radio 9-12-floro involucro longiore.

A native of Van Diemen's Land, where its seeds were collected by Mr. Bunce, who sent them to the Horticultural Society. It forms an erect shrub, closely covered with long narrow leaves like those of rosemary in form, and produces in the month of August, at the end of its young shoots, from three to five heads of flowers, whose starry ray is long and a clear pale violet. It is a pretty addition to the Conservatory. This species is nearly related to *Eurybia ledifolia*, a species partly described by M. DeCandolle from specimens collected by Mr. Gunn, (no. 284), and sent him by me; but it differs from that plant in not having shaggy involucres, and in its leaves, which are longer and thinner, not being revolute at the margin, &c. In habit it is more like E. glandulosa, *DC.* also a Van Diemen's Land plant; but the latter species has numerous campanulate flower-heads and a short ray. All the green parts of this plant are covered by specks of a whitish viscid exudation.

113. STANHŌPĔĂ *oculātă.* Botanical Register, t. 1800.

Var. *Barkeriana;* sepalis petalis et columnæ dorso purpureo maculatis, hypochilii sacco discolore.

This is a remarkable variety of *S. oculata*, obtained from Mexico by Mr. Barker. It looks like *S. insignis* with the lip of S. oculata, and is very handsome. The sepals, petals, and column are covered with numerous purple freckles rather than spots, which, as the flower fades, run together, as if their colouring matter were dissolved; so that at last the flower becomes of a dull wine-red tint.

114. PORTULĀCĂ *grandiflōră; rutila.* Hooker in Botanical Magazine, t. 2885.

This is a beautiful variety of a greenhouse perennial, of whose brilliancy the figure above quoted in the Botanical Magazine gives an inadequate idea. The flowers are the richest crimson, more bright than even *P. Gilliesii*, and they are nearly as large as a half-crown when full blown. The plant is succulent, with long cylindrical leaves, and will only expand its blossoms under sunshine; but as it is easily cultivated that circumstance signifies little, and when it does open it is a magnificent object. The plants I am describing have been raised in the garden of the Horticultural Society, from seed sent from Florence by the Hon. Frederick Thelluson. The species is a native of Mendoza.

115. STENOCHĪLŬS *longifŏlĭŭs* (A. Cunn. mss.); foliis linearibus canaliculatis acuminatis coriaceis glanduloso-punctatis minutissimè pubescentibus floribus pluriès longioribus, corollâ tomentosâ: limbo subæqualiter 5-partito, ovario biloculari.

A shrub, discovered many years ago by Mr. Allan Cunningham, in the interior of New Holland, and latterly again met with by Major Sir Thomas Mitchell, by whose people it was called "Lemon Haws," on account of the odour of its fleshy fruit. It forms a small bush, flowering in its native country in March, but here in the month of August. The leaves are long, very narrow, coriaceous, conspicuously marked with glandular dots, and apparently smooth, until they are examined by a microscope, when they are seen to be covered with fine short close-pressed hairs. The flowers are about an inch long, single or in pairs in the axils of the leaves, downy, and of a dull greenish red colour, with the stamens a little projecting. In both this and the next the ovary is bilocular. The corolla of Stenochilus, although formed upon the same plan as that of other labiate flowers, differs in this, that the four upper lobes grow into an upper lip, and that which is usually the middle lobe of the lower lip forms by itself the whole lower lip, which is rolled back upon itself.

116. STENOCHĪLŬS *incānŭs;* tota pilis minimis stellatis incano-tomentosa, foliis ovali-lanceolatis obtusis in petiolum angustatis impunctatis, corollâ tomentosâ utrinque glandulis pruinosâ: labio superiore cymbiformi quadridentato inferiore semilibero revoluto multò longiore, ovario biloculari.

Another shrub resulting from Sir Thomas Mitchell's last journey into the south-east interior of New Holland, for which the Society is indebted to that distinguished officer. It forms a gray bush, looking like an olive, or some leafless Acacia, and is covered closely with a short white down, consisting of *stellate hairs;* a circumstance deserving of attention in such a natural order as that of Myoporaceæ. The flowers are solitary, axillary, and rather more than an inch long. The corolla is dull green, with the upper lip compressed, slightly toothed at the point, beyond which the stamens project a little, and much longer than the lower lip. The leaves have not the transparent dots of the last species at all distinctly; but traces of dots may be found upon cutting into the leaves. The whole surface of the corolla is studded with beautiful but microscopical pin-headed transparent glandular hairs.

117. ASTERACĀNTHĂ *longifŏlĭă.* Nees in Wall. plant. As. rar. iii. p. 90.

This is a handsome greenhouse herbaceous perennial, seeds of which were sent to the Horticultural Society by Mr. McCulloch, one of the gardeners to His Highness the

Pacha of Egypt. It forms a bright rich green bushy plant, with long thin rough-haired opposite lanceolate leaves, which are auricled and amplexicaul, and in their axils it bears whorls of gay blue labiate flowers. If care is taken to reduce the vigour of leaves, by not giving the plant too much shade and moisture, it becomes very handsome; but if it is permitted to "run to leaf" too much, its beauty is considerably impaired.

Two circumstances connected with this Asteracantha deserve particular notice. The whorls of leaves are in sixes, two of the leaves being larger than the other four. The largest leaves are the ordinary leaves of the stem, and each forms at its axil a short cluster of flowers; below which two other leaves, smaller than the first, make their appearance at right angles with the latter, so that there are three leaves, two small and one large, on each side of the stem.

But the stem leaves attempt in the first instance to produce an ordinary branch from their axils; in this however they do not succeed: the branch is abortive, and remains in the form of a spine; the secondary leaves also attempt each for itself to produce axillary branches, with a like want of success, and a similar result, spines being produced instead; and hence each whorl of flowers is surrounded by six spines, forming a star: whence the name of Asteracantha (*αστηρ*, a star, *ακανθα*, a spine) has been contrived.

118. CIRRHOPĔTĂLŪM *nūtāns;* pseudobulbis ovato-subrotundis rugosis, foliis ovato-subrotundis emarginatis coriaceis humi pronis, scapo erecto elongato, umbellâ multiflorâ nutante, bracteis linearibus acuminatis, sepalis glaberrimis: supremo acuminato lateralibus linearibus ligulatis vix acutis, petalis ovatis acutis serrulatis, labello obtuso convexo bicristato, columnæ angulis obsoletè bidentatis.

A pretty little epiphyte, sent to Messrs. Loddiges from Manilla by Mr. Cumming. It has a nodding umbel of pale straw-coloured flowers, at the end of a weak scape about six inches high. The leaves are from an inch and half to two inches long, very thick, emarginate, and lying almost flat upon the ground. The species is very near C. Wallichii, a Nepalese plant, the specific character of which in the Genera and Species of Orchidaceous plants is erroneous, in consequence of bad specimens and an Indian drawing having been misunderstood. It is necessary to correct the definition of that species as follows.

119. CIRRHOPĔTĂLŪM *Wallĭchĭī* (Gen. et sp. orch. p. 59.); foliis lanceolatis apice fissis scapi erecti longitudine, racemo multifloro pendulo, bracteis linearibus acuminatis, sepalis glaberrimis supremo acuminato lateralibus linearibus ligulatis vix acutis, petalis acuminatis subciliatis, labello . . . .

120. CIRRHOPĔTĂLŪM *fimbriātūm;* pseudobulbis ovatis subtetragonis, foliis ovalibus . . . . . , scapo erecto, bracteis linearibus acuminatis, umbellâ multiflorâ, sepalis lateralibus ligulatis vix acutis cohærentibus supremo petalisque ovatis acuminatis fimbriatis, labello crasso linguiformi nudo obtuso, columnæ angulis cornutis edentulis, antherâ papillosâ.

A very pretty new species of this curious genus, with the long lower green sepals united into a channelled rather stiff strap, while the upper sepal and the petals are broken up at the margin into beautiful purple fringes. It is extremely different from all the species previously known, and was imported from Bombay by Messrs. Loddiges. In both this and C. nutans the pollen-masses are four in number, and collateral, all adhering together, with the interior pair much smaller than the two outer.

121. CIRRHǢĂ *saccātă*; pseudobulbis ovatis obtusè tetrapteris inter angulos costatis, foliis oblongis plicatis sub-septem-costatis in pseudobulbos omninò sessilibus, scapo pendulo trigono, racemo multifloro, sepalis oblongis obtusis lateralibus margine revolutis, petalis lineari-lanceolatis obtusis basi teretibus compressis, labelli lobo medio galeato saccato.

This is a very distinct species of the curious genus Cirrhæa, for which I have to thank His Grace the Duke of Bedford, by whose directions it was sent me from Woburn, where it flowered in August. From all the previously known species it differs in the middle lobe of the lip being concave, and having very much the form of that of many Satyria. It has the general appearance of the other species, but its raceme is nearly a foot long, and the dull yellow green flowers are twice as large as those of any before discovered. It has been figured in the Botanical Magazine under the name of C. *fusco-lutea*, which is a different plant.

122. CY̆TĬSŬS Weldēnĭī. *Host. fl. austr.* 2. 339.

Baron Jacquin, in a letter I have recently received, expresses his surprise at the opinion given in one of our English books that this species is the same as C. *Laburnum* or C. *alpinus.* He says it is impossible to confound a plant having *erect racemes, which do not droop even when in fruit,* and ovate-roundish leaflets, with either the one or the other of those species. He adds, that the plant, when not in flower, is more likely to be confounded with *Anagyris fœtida*, as has actually happened. It is however only fair to remark, that in our gardens this C. Weldenii has much the appearance of a Laburnum, and that it has never yet flowered that I am aware of; so that a person unacquainted with Host's book might easily fall into the error which has actually occurred.

It is well known that the seeds of Laburnum are poisonous, fatal accidents having occurred to children who have incautiously eaten them. C. *Weldenii* appears to possess this deleterious quality in a more concentrated state, for, according to Baron Welden, the smell of the flowers causes headache, and the milk of goats which feed upon the flowers produces the same effect, only more severely, upon those who drink it.

123 NĔPĔTĂ salviæfŏlĭă. *Bentham gen. & sp. Labiat. p.* 481.

This Himalayan plant has flowered in the garden of the Horticultural Society, where it has been raised from seeds received from the East India Company. It proves to be a hoary perennial of little beauty, with long slender pallid or white flowers, arranged in long-stalked cymes.

124. IPOMŒĂ longifŏlĭă. *Bentham Plant. Hartweg. p.* 16.

Of all the flowers yet received from Mr. Hartweg by the Horticultural Society this is one of the finest. The stems are *erect*, not twining, and the flowers grow singly in the axils of the long entire grey leaves. The corolla is white, with a delicate noyau smell, and is as large as that of Calonyction bona nox. It is a perennial, with a fleshy tuber-like root, and has lately blossomed in the Society's Garden. It will probably do very well out of doors in summer, but it will require such protection as is given to the Dahlia in winter.

125. SOLĀNŪM *cāndĭdūm;* (acanthophorum) caule fruticoso villosissimo aculeis rectis densè armato, foliis oblongis cordatis sinuato-angulatis tomentosis subtùs incanis venis utrinque petiolisque villosis aculeatis, racemis sessilibus lanatis distichis sub folio natis rachi aculeatâ, calycibus 5-lobis inermibus.

Among the crowd of Solana now scattered over many books, it is almost impracticable to ascertain whether a foreign species is new or not. This however seems to have been hitherto omitted by systematists. It is a fine, noble-looking shrub, with leaves a foot long and nine inches broad, and clusters of large handsome pure white flowers. It was received from Mexico by George Barker, Esq. who presented it to the Horticultural Society, in whose garden it is kept in the stove.

STARCH ON THE *OUTSIDE* OF POLLEN-GRAINS.

In the Annals of Natural History, vol. iii. p. 127, there is a report of a memoir upon pollen, read before the Botanical Society of Edinburgh, by M. Giraud, in which memoir the author states that there are "minute opaque bodies on the surface of the pollen of Polemonium cœruleum, which, when immersed in water, appear to be possessed of spontaneous motion." Having lately been led to examine the structure of pollen, I took the opportunity of enquiring into the nature of that to which M. Giraud ascribes so singular a property. I had no difficulty in finding the bodies spoken of, for they are from $\frac{1}{10000}$ to $\frac{1}{15000}$ of an inch in diameter, thickly stud the surface of the pollen-grain, which is itself about $\frac{1}{600}$ of an inch in diameter, and are readily detached if the grains are placed in water, when they float about, turning upon their longer axis, with the same kind of motion as is seen in the molecules contained in the interior of the pollen. They vary in form from oblong to spheroidal, but I do not find them opaque; on the contrary they are transparent, like grains of fæcula, and so much like them, in certain states, that I felt persuaded from the first moment of seeing them that they were really of that nature. The application of iodine immediately gave them a pale blue colour; so that if this agent is in all cases a test of starch, the bodies seen by M. Giraud must be of that nature. I regard this as a circumstance of some physiological interest, for I am not aware that amylaceous granules have been before detected on the *outside* of any vegetable organ. Pollen, indeed, being developed in the interior of the anther, and produced as it would seem by a disintegration of the parenchyma forming the mass of that organ, cannot strictly be compared to any part of a plant except to the individual cells or tubes constituting the elementary tissue; nevertheless it is equally novel to find fæcula secreted in the intercellular passages, its situation having been always hitherto assigned to the interior of cells, where it is supposed to be formed by those vital forces of plants which carry on the functions of digestion and assimilation. Are we to suppose this fæcula to be the residuum of the contents of the mother cells, the intersection of which produces the grains of pollen, and within which the latter are organized?

Flora de Filipinas. Segun el sistema sexual de Linneo. Por el P. Fr. Manuel Blanco, *Agustino Calzado.* Manila, 1837.

This is a thick square 4to. of 887 pages, upon the plants inhabiting the fertile and richly-wooded islands called the Philippines. It commences with a short preface explaining what has already been written upon the same subject by others; and a sketch of the principles of the Linnæan classification, with a glossary of botanical terms: the whole occupying lxxviii additional pages of introduction. The body of the work consists of descriptions of plants in Spanish, each filling on an average about three-fourths of a page, so that the whole number of species introduced may be estimated at about 1100. Of these a great proportion are referred to Linnæan plants, it is needless to say, with but little probability of their belonging to them; and there are, moreover, many new species. From the want of books the author has been unable to give any synonymy, which is much to be regretted, as the work contains a good deal of information concerning the uses of plants. Of new genera 17 are specially named, besides which others, in the opinion of the author less certainly new, are introduced and described, but are mentioned by their native names only. Thus, at the head of Pentandria Monogynia, stands a plant called *Bitlag*, which, the author thinks, may be the same as *Mayepea*. The new genera, and the natural orders to which they possibly belong are the following:—

Azaola, p. 402—*Sapotaceæ.*
Balingayum, p. 187—Placed near *Gronovia.*
Calius, p. 608—Not to be found at this page, to which it is referred in the Index.
Cobamba, p. 510—*Verbenaceæ.*
Enrila, p. 709—??
Lumanaja, p. 821—*Euphorbiaceæ.*
Lunasia, p. 783—*Euphorbiaceæ.*

Malaisia, p. 789—*Urticaceæ.*
Mamboga, p. 140—*Cinchonaceæ.*
Manungala, p. 306—*Simarubaceæ* ? Powerfully bitter ; a specific against cholera.
Palaquium, p. 403—*Sapotaceæ.*
Quilamum, p. 851—? ?
Quilesia, p. 176—*Olacaceæ?*
Soala, p. 437—*Clusiaceæ?*
Sulipa, p. 497—*Cinchonaceæ ?* Placed in Didynamia Angiospermia.
Tala, p. 484—*Scrophulariaceæ.*
Tayotum, p. 105—*Apocynaceæ.*

For the opportunity of examining this curious work I am indebted to the Hon. W. F. Strangways, by whom it has been presented to the library of the Horticultural Society.

PRIMARY DISTRIBUTION OF THE VEGETABLE KINGDOM.

In the present state of Systematical Botany every day may be said to throw some new light upon the principles of classification, and every new book to contain something important with reference to the plan upon which the vegetable kingdom is organized. While however improvements in the secondary details of classification are thus continually indicated, it is only here and there that any step is taken to interfere with the classes or primary groups of plants; indeed there can now be little doubt that in their most essential particulars these fundamental portions of the natural system are but little open to alteration; that the great divisions of *Exogens*, *Endogens* and *Acrogens* are essentially different from each other, no botanist will attempt to deny. But it is not therefore certain that they do not in themselves contain the types of other fundamental divisions, or in other words, that they do not represent three great plans of structure, each of which includes modifications of a much higher grade than such as are employed for the definition of natural orders. If this be so, it will be necessary to augment the number of primary divisions of the Vegetable Kingdom, and that an extended view of vegetable structure shews that necessity to exist, may now I think be proved.

Jussieu admits three primary groups only, namely—1. *Dicotyledons*, 2. *Monocotyledons*, and 3. *Acotyledons*, which are equivalent to the modern 1. *Exogens*, 2. *Endogens*, and 3. *Acrogens.*

It was however in course of time discovered that each of these groups contained plants as essentially different from each other in physiological circumstances as the primary groups themselves, and hence each has been subdivided, and the number of classes increased to six, in the following manner.

1. In *Exogens* there are two totally different modes in which the influence of the pollen is communicated to the seed. The larger part of this primary group consists of plants provided with the apparatus called style and stigma, through which the pollen-tubes are introduced into the ovary in the act of fertilization. But others are so constructed that the pollen falls immediately upon the seeds, without the introduction of any intermediate apparatus; a peculiarity analogous to what occurs among reptiles in the Animal Kingdom. And as was to have been anticipated, the plants in which this singular habit occurs prove, upon being collected together, to form a group having no direct affinity with those among which they had been previously associated. Hence Exogens have been broken up into 1. *Angiosperms*, or those having an ovary, style, and stigma; and 2. *Gymnosperms*, which have neither.

2. Among *Endogens*, in like manner, two modes of propagation have been discovered, essentially different from each other. In the major part of them the result of the fertilization of their seed is the production of an embryo, having one point upon its surface predestined to become a stem, and another to become a root; besides which their elementary organization includes vascular tissue in abundance. But others, although in a high state of developement, are wholly or nearly destitute of vascular tissue, and where their seed is fertilized, instead of an embryo being formed, the issue is a mass of sporules, or reproductive bodies, analogous to those which Acrogens have instead of seeds. The old class of Endogens required therefore to be replaced by 3. *Spermogens*, whose organs of propagation are seeds, and 4. *Sporogens*, commonly called Rhizanths, whose reproductive bodies are spores.

3. Among *Acrogens* also two modes of growth occur, so essentially different from each other that they evidently represent different kinds of vegetation. In some of them there is a distinct axis of growth, or stem and root, symmetrically

clothed with leaves; in others they are irregular cellular expansions, destitute of true leaves; in the former we find a trace of something equivalent to the sexes of Exogens and Endogens, in the latter all indications of the kind disappear. Thus are formed the two groups now called 5. *Cormophytes,* where there is a stem and leaves, &c., and 6. *Thallophytes,* where there is no separation of those parts.

To what extent dismemberments of the three classes of Jussieu may be further carried, there is no evidence to shew; it is not however probable that they are capable of much further increase. For with a few exceptions, the affinities of the six primary groups now indicated are too continuous and complete to allow us to suppose that any great physiological or fundamental differences of organization exist among them. Upon the few exceptions that do exist I propose to offer some observations.

Among Angiospermous Exogens the Natural orders *Aristolochiaceæ, Nepenthaceæ, Lardizabalaceæ, Menispermaceæ, Piperaceæ,* and some others allied to the latter, stand isolated, as it were, in whatever part of the group they are stationed, having no obvious affinity with any other orders; for we can only regard the approximation of *Menispermaceæ* to *Anonaceæ,* &c. as the result of altogether artificial considerations. Now all these orders agree in one remarkable circumstance. Instead of their wood being formed by zone deposited over zone, season after season, as is the case in the great mass of Exogens, they never have more than one zone of woody matter, to whatever age they may have arrived. Whether their wood itself is formed exactly in the same way as that of other Exogens, namely, by a gradual external addition of stratum upon stratum, is doubtful; it is probable that they have a mode of growth of their own, analogous to that of *Aristolochia,* in which the wood when young is augmented by the successive introduction of wedge upon wedge of wood between wedges originally placed concentrically around a medullary axis. Such plants as these agree with Exogens in their Dicotyledonous embryo, and in general appearance, but their mode of growth is an approach to that of some Endogens to be presently noticed, and I therefore think they ought to be regarded as a fundamental group, which from the homogeneity of the wood may be called *Homogens,* for the sake of contrasting their structure with the concentrically zoned growth of other Exogens, to which the collective name of *Cyclogens* may be applied. In this manner Exogens are composed of three classes, 1. *Angiosperms*, 2. *Gymnosperms*, and 3. *Homogens*.

Among Endogens I find a group of exactly the same nature as the last, and differing from the mass of the order in nearly the same manner. The peculiar habit of *Smilax* and some other Endogens, which no one would suppose from their general appearance to belong to that class, some time since led me to propose the separation of them into a group which was called the *Retose*. But as I had no better character for it than the reticulated leaves, nobody seems to have adopted it, and it has been regarded as an unnecessary separation of plants essentially the same; an opinion to which, in the absence of better evidence than I have before been able to offer, there has been nothing to oppose beyond the conviction that the Retose group is in nature well founded, although its true characters may have been undiscovered. It now however appears that Smilax and its allies have the wood of their stem arranged upon a plan extremely similar to that of *Homogens;* and consequently they will constitute, not a subdivision of Endogens as I formerly supposed, but a new class or primary group. If the annual branches of a Smilax are examined, there is nothing in their internal structure at variance with that of a stem of Asparagus; they are exactly Endogenous; but in the rhizoma of the whole genus (take the Sarsaparilla of the shops for instance) the wood is disposed in a compact circle, below a cortical integument, and surrounding a true pith; so that the rhizoma or permanent part of the stem is that of a *Homogen*. In *Dioscorea alata* the stem is formed of eight fibrovascular wedges placed in pairs, with their backs touching the bark, surrounding a central pith and having wide medullary plates between them; in fact, when the stems of this plant are in a state of decay, the eight fibrovascular wedges may be pulled asunder, like those of a Menispermaceous plant. In *Testudinaria elephantipes* the structure of the stem is of nearly the same kind; several bundles of fibrovascular tissue form a circle surrounding a pith, and pierced with broad medullary processes. *Lapageria* and *Philesia* have each a zone of wood below their bark, and a central pith in which the common fibrovascular bundles of Endogens are disposed; a tendency to which is also observable in Smilax. *Roxburghia* I have not had an opportunity of examining. It seems therefore clear that what I have elsewhere called the Retose group is composed of plants whose mode of growth is essentially different from that of *Endogens* in general; and that the species composing it stand in the same relation to the mass of *Endogens*, as *Homogens* to the mass of *Exogens*. For these reasons it appears that Endogens contain three distinct types of organization, namely *Spermogens* and *Sporogens*, or Rhizanths, of which the former consists 1. of true Endogens with striated inarticulated leaves, and 2. of false Endogens with reticulated disarticulating leaves, the first of which may be named *Ptychogens*, and the second *Dictyogens*.

From these considerations we learn that of the three primary divisions of the Vegetable Kingdom, recognized by Jussieu, two require to be broken up into three each, and the other into two; making eight in all. The mutual relations of which with each other and the Animal Kingdom may be expressed thus:—

Angiosperms.
Homogens. Dictyogens.
Gymnosperms. Ptychogens.
Cormophytes. Sporogens.
Thallophytes.
*
(*Animal* Acrita *Kingdom.*)

On the opposite page is an analytical arrangement of the classes, intended to bring their distinctions more plainly into view.

PRIMARY DIVISIONS IN THE

VEGETABLE KINGDOM.

1st State. *SEXUAL, or FLOWERING PLANTS*	*Division I.*	EXOGENS	*Cyclogens*	Class I. Angiosperms.
				Class II. Gymnosperms.
				Class III. Homogens.
	Division II.	ENDOGENS	*Spermogens*	Class IV. Dictyogens.
				Class V. Ptychogens.
				Class VI. Sporogens, (*Rhizanths*).
2nd State. *ESEXUAL, or FLOWERLESS PLANTS,*	*Division III.*	ACROGENS		Class VII. Cormophytes.
				Class VIII. Thallophytes.

126. CODONŌPSĬS *lūrĭdă;* foliis cordatis serratis pilosiusculis utrinque concoloribus, calycis tubo nullo, sepalis rhomboideis serrulatis ciliatis tubo corollæ æqualibus basi integerrimis.

A fœtid twining milking annual, with large green flowers slightly dotted with purple in the inside. It is a native of the northern parts of India, whence seeds were sent to the Horticultural Society by Dr. Falconer. As a twining Campanulaceous plant it is closely allied to Canarina ; but it has none of its beauty.

127. SĀLVĬĂ Moorcroftiānă. *Wall.—Benth. Lab. p.* 228.

This plant has been raised in the garden of the Horticultural Society, from seeds sent from India by Dr. Falconer; it proves a herbaceous species resembling S. Sclarea, with very large leaves, cordate at the base, woolly underneath, and pale light blue flowers about one-half the size of that species.

128. CYNOGLŌSSŪM *glochidiātūm.* Wall.—Benth. in Royle's Illustr. p. 306.

A straggling herbaceous plant about three feet high, of a loose inelegant mode of growth, and not much covered with leaves, which are sessile, ovate, oblong, acute, and bright green. The flowers are rather small, but of a most intense blue, and therefore well suited to gather for the sake of ornamenting sitting-rooms. It is quite hardy, and was raised by the Horticultural Society from seeds sent from India by Dr. Falconer.

129. APLOTĀXĬS *albēscēns.* DC. prodr. vi. 540.

A handsome herbaceous plant, native of the northern provinces of India, whence it has been lately introduced by the East India Company, through Dr. Falconer. It forms a bush about three feet high, with long lanceolate deep green leaves, hoary with down on the under-side. The flower-heads are arranged in a panicled manner, and are narrow, with pale bright purple blossoms.

130. MĀLVĂ *lūcĭdă;* annua, glaberrima, lucida, foliis superioribus cuneatis serratis rotundatis trilobis basi integerrimis cordatis, floribus axillaribus fasciculatis, calycibus reticulatis.

A Himalayan, apparently annual, plant, resembling the common *M. sylvestris*, but having all the herbage bright green, and very lucid, without a trace of hairs, while the upper leaves, and indeed all except the lowermost, are wedge-shaped, 3-lobed, obtuse and serrated ; with the base, which is cordate, quite entire. The flowers are a rich deep purple. It will make a good annual for shrubberies and roughly kept places.

131. LEPTODĒRMĬS *lanceolātă.* Wallich in Roxb. fl. Ind. 2. 191. DeCand. prodr. iv. 462.

This plant proves to be a small shrub, with ovate bright green strongly feather-veined leaves, and pale yellow flowers, tinged with purple ; it is something like a cream-coloured Bouvardia. In the garden of the Horticultural Society it seems nearly, if not quite, hardy.

132. SOLLYA *linēārĭs ;* foliis glaberrimis linearibus et lineari-lanceolatis obtusiusculis, cymis multifloris nutantibus glabris, fructibus oblongis.

This third species of the beautiful genus Sollya has been lately added to our collections by Robert Mangles, Esq. of Sunning-hill. The specimens which have as yet flowered are weak, and by no means what it may be expected that they will become. In wild specimens before me, for which I am indebted to Mr. Toward, gardener to H. R. H. the Duchess of Gloucester, I see as many as 11 flowers in a cluster, and a single branch has 5 such clusters. The flowers are of the deepest and richest blue. This plant differs from *S. heterophylla* in having its leaves linear, or at the most linear-lanceolate, without any trace of toothings upon their margin ; the stigma is less distinctly two-lobed, and the fruit is much shorter and thicker, so as to have an oblong instead of a narrow terete figure. It is much to be desired that *Sollya angustifolia*, the *Billardiera fusiformis* of Labillardière, should be procured for our gardens ; it is said to be found in Van Diemen's Land, and to have hairy leaves, distinctly veined, and large blue flowers.

133. HŌTĒIĂ japōnĭcă. *Morren & Decaisne Ann. sc. 2nd ser. II.* 317. *t.* 11. Spiræa barbata. *Bot. Reg. t.* 2011. Astilbe rivularis. *Don prodr. fl. nep.* 210.

At length an opportunity has arisen of examining ripe seeds of this plant, which have been obtained from India by Dr. Falconer, and I find that they have an abundance of fleshy albumen, surrounding a straight cylindrical embryo rather more than half their length. The seeds are scobiform, quite smooth, not at all reticulated, with a lax testa, which is prolonged at each end into a tapering withered sac, but fits pretty tight to the seed in the middle. Each seed, including its testa, is rather more than half a line long.

134. COTYLĒDŌN cristātă. *Haworth in Phil. Mag.* 1827. *p.* 123. *DC. prodr.* 3. 399.

For this little known plant I am obliged to William Brent, Esq. of Walworth, who obtained it from the Botanical Garden of Leyden, and succeeded in flowering it. It is very well described by Haworth, so far as his account of it goes; but since M. DeCandolle regarded it as one of the species insufficiently known, it deserves to be noticed more particularly. The stem is very short, and closely covered with leaves, from between the touching bases of which there proceeds a number of light brown threads, described by Haworth as rufous hairs, but in reality withered roots, emitted by the leaves, but perishing after exposure to the air. The leaves themselves have a singular form ; they are described technically as being wedge-shaped, triangular, stalked, and terminated by a curled crest ; but in more homely terms they look very like a jelly-bag, or a filter sewed up at the upper edge, and thrown on its side so as to acquire a flattened figure ; they are covered with very short hairs, which are obtuse, and placed perpendicularly upon the epidermis, so that the leaves have a surface like that of fine woollen cloth. I find nothing like the furfuraceous hairiness described by Haworth, who mistook for scurfiness a great number of pallid specks, indicating subcutaneous air chambers, with which the epidermis is thickly studded. The flowering stem is an erect spike, about three feet high, covered with close-pressed slender green flowers, tipped with pink, about half an inch long, and rather longer than the internodes. The corolla is completely monopetalous, the limb only, which is revolute, being divided into five segments. The stamens grow to the sides of the corolla, those opposite the petals being a little longer than the others. The carpels are distinct, slender, rather downy near the base ; the scales beneath them are white, and emarginate.

The plant is a very curious species, but it has nothing beautiful in its appearance.

135. EPIDĒNDRŪM *invĕrsūm;* pseudobulbis elongatis compressis, foliis loratis canaliculatis obtusis, spicâ terminali sub-6-floro, bracteis brevibus ovatis acuminatis, ovario triquetro, sepalis petalisque patentibus lineari-lanceolatis convexis subæqualibus, labello adnato oblongo acuminato basi convexo ecalloso, columnâ obtusè 3-dentatâ, antheræ cardinis appendice oblongâ denticulatâ.

A Brazilian epiphyte, nearly related to *Epidendrum fragrans*, for which I am obliged to Messrs. Loddiges. The flowers are straw-coloured, with a few purple streaks on the column and at the base of the lip, and have a heavy not very pleasant smell, something like that of Ground ivy (*Glechoma*). Of this form of the genus Epidendrum, of which *E. fragrans* may be selected as the type, there are now several species on record, and it is probable that many more remain to be discovered; I am already acquainted imperfectly with more than one undescribed species. It will therefore be necessary to provide a distinct section for such species, to which the name of Osmophytum may be assigned, in allusion to their being usually scented plants.

136. IPOMŒĂ *Pŭrgă.* Wenderoth: Schlecht. in Linnæa, viii. 515. Lindley Flora medica, no. 809.

This beautiful plant, whose fleshy root is one of the species from which the principal supply of Jalap is derived, has been obtained from Mexico by several persons; and has lately flowered with Thomas Harris, Esq. of Kingsbury. Its slender flowers are of a rich crimson colour, and about four inches long. All Botanical observations upon the species I reserve till I can publish a figure of the plant; but as it is already in the possession of many persons, and will soon become common, I am unwilling to keep back the following useful notes upon its cultivation, for which I am indebted to Mr. D. Beaton, Mr. Harris's intelligent gardener.

" It seems to require a cool atmosphere and plenty of room at the roots, and yet the latter are neither numerous nor strong. In the stove it grows too vigorously, without any disposition to flower. I had one plant in a pot all this season in the orange house, but if I had turned it out against the front of the stove I have no doubt it would have succeeded better in regard to flowering. To keep the roots or tubers dry from November to March, then to force them slightly, and afterwards to harden them, so as to stand the open air by the end of May, would, I think, be the best way of getting it into fine bloom. Last season a dry root from Xalapa was planted out of doors about the beginning of June, and by the end of September about two dozen flowers were ready to expand, but being in the open garden it was then too cold for them to open."

137. SPECKLĬNĬĂ *obovātă;* folio coriaceo obovato emarginato basi angustato canaliculato caule longiore, spicis brevibus fasciculatis, floribus glaberrimis, sepalis petalisque linearibus acuminatis, labello lineari abruptè acuto medio paululùm constricto, columnâ cucullatâ alatâ subdentatâ.

A small Brazilian plant, with the appearance of a Pleurothallis. The leaves are obovate and very thick ; the flowers are small, pale yellow, scentless, and in numerous fascicled short spikes.

138. RODRIGUĒZĬĂ *laxiflōră;* pseudobulbis ancipitibus ovalibus, foliis lineari-lanceolatis acutissimis, racemo laxo cernuo, bracteis ovario subæqualibus, labelli recurvi obsoletè bicristati appendice ungui æquali, sepalo antico angusto cuneato bifido postico petalisque planis.

I received this plant as long since as the year 1834, from Mr. Bateman, who first distinguished it from R. planifolia and recurva ; since that time it has been found in the Organ mountains of Brazil by Mr. Gardner, of whose herbarium it is no. 654 ; and I have recently observed it in the collection of Messrs. Loddiges. It is a pale green-flowered species, much smaller than those just mentioned, with a very lax nodding spike, on which the flowers are generally arranged at considerable intervals; not always however, for I have specimens with the inflorescence as compact as that of *R. secunda.*

139. RODRIGUĒZĬĂ *crīspă;* sepalis omnibus liberis petalisque undulato-crispis, labelli bicristati appendice ungue multò breviore.

This is the finest of the green-flowered species, and is remarkable for the crisped appearance of its flowers, which are sea-green bordered with yellow. Their fragrance is delicious, resembling that of Primroses. It is a native of Brazil.

140. CATASĒTŪM *proboscĭdĕūm;* labello deflexo multifido : laciniis filiformibus laceris, columnâ apice proboscidiformi : cirrhis deflexis columnâ longioribus.

For this novelty I am obliged to George Wailes, Esq. of Newcastle, who received it from Mr. Gardner, marked "No. 2, new, found growing on a small species of Palm, near Sertâo." The plant is nearly related to *Catasetum cernuum* and *barbatum*, from which its deeply lacerated lip, and the longer proboscis of the column, seem to distinguish it; it may however be a mere variety of the latter species.

Mr. Wailes observes, that "it is somewhat like *Catasetum trifidum* in growth; the flower-stem is about ten inches high, rather drooping, with the upper part of a pinkish hue. The flowers in two specimens are nine in number, though in one the rudiments of two or three others are apparent, but probably owing to the weakness of the plant they have not come forward. When well established we may expect finer specimens."

The same plant has been communicated to me by Mr. Herbert.

I have received from the Honourable and Rev. W. Herbert the following notices of new Amaryllidaceous plants.

141. CLITANTHES. *Herbert.* Perianthium suberectum tubo angustè subinfundibuliformi, limbo brevi regulari, coronâ liberâ staminiferâ, filamentis brevibus, antheris versatilibus, stylo recto gracili, stigmate breviter trilobo, polline elongato-ovali. *Plantæ Andinæ; bulbo parvo ovato, foliis proteranthiis angustis linearibus.*

1. C. *humilis.* Scapus uniflorus pedunculus et spathæ pars inferior vaginis foliorum subterraneis sæpissime latentes; germen oblongum $\frac{3}{8}$ unc. perianthium $2\frac{3}{8}$ unc. luteum limbo sub-$\frac{3}{4}$ unc. coronâ $\frac{1}{4}$ unc. filamenta obliquè alata dentiformia apice tenui, antheræ oblongæ $\frac{1}{8}$ unc. folia viridia subacuta 3-5-unc. $\frac{1}{8}$ unc. plùs minùs lata. *Ex Palcamayo provinciæ Tarmæ in Peruviæ montibus alt.* 9600 *ped. a dom. J. Maclean lecta.*
2. C. *Macleanica.* Scapus uniflorus sex unc. liber, pedunculus $\frac{3}{4}$-$1\frac{1}{2}$ unc. spatha circ. biuncialis, germen latè ovalis $\frac{3}{8}$ unc. vel ultra, perianthium biunciale luteum limbo $\frac{11}{16}$ unc. coronâ $\frac{3}{16}$ unc. filamenta gracilia $\frac{1}{4}$ unc. antheræ $\frac{1}{8}$ unc. stylus stamina superans limbo vix $\frac{1}{8}$ unc. brevior, folia viridia subacuta subpedalia $\frac{1}{8}$-$\frac{3}{16}$ unc. lata basi cylindraceo-vaginante. *Ex Peruviæ montibus, in loco* 11000 *ped. alt. infra Checlam et supra "San Mateo" a dom. J. Maclean lecta.*
3. C. *lutea.* (Clinanthus luteus, *Herb. Amar.*) Scapus biflorus circ. $3\frac{1}{2}$ unc, liber, spatha circ. $2\frac{1}{4}$ unc. pedunculi inæquales, germen subrotundum (latè ovale), perianthium $1\frac{7}{8}$ unc. luteum limbo $\frac{5}{8}$ unc. coronâ brevi, filamenta obliquè alata dentiformia apice tenui, antheræ circiter $\frac{1}{8}$ unc. folia viridia circ. 6-unc. $\frac{3}{16}$-$\frac{1}{4}$ lata basi cylindraceo-vaginante. *Ex Peruviæ montibus, a Ruiz et Pavon lecta.*

The name Clinanthus, which was given from the obliquity which the flowers in Ruiz's specimen of his undescribed Pancratium luteum had taken in drying, is changed for Clitanthes, from *κλιτυς*, a mountainous declivity, and *ανθος*, a flower. The genus is founded specially on C. humilis, of which the tube is quite erect. Bulbs and specimens of humilis and

Macleanica were collected in December, 1838, by John Maclean, Esq. of Lima, in his excursion across the Cordillera on the western slope, and obligingly sent by him to Spofforth, together with several others of equal interest.

142. ISMĒNĒ *deflēxă*. Folia subpedalia acuta $1\frac{3}{4}$ unc. lata viridia basi cylindraceo-vaginantia, scapus anceps, spatha marcescens tubum biuncialem pallidè virentem curvatulum vix æquans, limbus albus reflexus vix 4-uncialis sepalis angustis mucrone petala obtusa parum latiora superantibus, corona ampla horizontalis laciniis duabus inferioribus adpressa triuncialis lobis recurvis lacero-truncatis dentibus filiformibus alba fundum versùs virens, filamenta alba $1\frac{1}{4}$ unc. vel ultra, superiora pendulè ori coronæ adpressa, inferiora conniventia, stylus coronam 2 unc. superans stigmate parvulo. Planta Ismeni calathinæ similis odore subgrato. In jugo montium Peruviæ San Mateo dicto.—W. H.

A bulb of this new species of Ismene, found by J. Maclean, Esq. on the Quebrada de San Mateo at the elevation of 10,984 feet, flowered in the greenhouse at Spofforth in July, 1839, having been potted in white sand with a small admixture of light loam, in consequence of the bulbs having been recognized as a species of Ismene by their appearance. It forms a connecting link between the original species of Ismene and the genus Elisena, by the adpression of its cup to the lower segments of the limb, and the greater length of the filaments, of which the three upper instead of dipping into the cup lie across its mouth. Elisena longipetala has precisely the growth and habit of an Ismene, and a bulb of ringens (P. ringens of Ruiz) lately received from Lima, has entirely the aspect and habit of I. calathina, with a sheathing column, contrary to the representation in the Flora Peruviana.

A variety of I. amancaes has the lobes of the cup united, so as to form an entire margin, projecting beyond the point of the insertion of the filaments. It seems therefore very probable, that, when better understood, the genus Elisena will merge in Ismene. Every Ismene delights in white sand, every Hymenocallis in strong alluvial soil, and immersion in water.—W. H.

143. LǼLĪĂ *flāvă;* pseudobulbis ovalibus 1-2-phyllis foliis carnosis coriaceis planis subconvexis brevioribus, scapo erecto foliis longiore squamulis quibusdam distantibus vaginato apice paucifloro bracteis minimis acutis, sepalis petalisque oblongo-linearibus obtusis, labelli lobo medio crispo recurvo lateralibus obtusis undulatis multò longiore.

"This plant, I believe, is a native of Mexico, from whence it was brought several years ago, and added to Sir

Charles Lemon's collection at Carclew, where it flowered for the first time in the autumn of 1839.

"*Pseudo-bulbs* erect, roundish oblong, from two to three inches high, and about two and half or three inches in circumference at the base, from which they taper upwards and become one or two-leaved. They are smooth and of a deep shining green, nearly all concealed by several large, imbricated, thin, brown-coloured leafy scales. *Leaves* from three to five inches long, and about an inch broad, oblong lanceolate acute, very thick and stiff, recurved both at the point and edges, and of a dark green colour. *Scape* about a foot high, rising from the crown of the pseudo-bulb between the two leaves, round and erect, pale green, bearing three or four flowers near the top, with a small, persistent, acute bractea at the base of each, and a single brown-coloured sheath an inch long at its junction with the bulb. *Pedicels* nearly erect, an inch in length, somewhat clavate and channelled, and of a pale green. *Flowers* bright yellow, opening one at a time, and remaining expanded for a fortnight or three weeks. *Sepals* spreading, oblong-lanceolate, bluntish at the point, about an inch or more in length, and a quarter of an inch in breadth. *Petals* similar in form and colour to the sepals, but exceeding them a little in size. *Labellum* rather shorter than the petals, three-lobed, the middle one is recurved and undulated at the margin in the way of Cattleya crispa, with two raised longitudinal processes forming a sort of groove down the centre. The two lateral lobes are erect, with their edges plain, and meet above the column so as almost to conceal it. *Column* triangular, or nearly so, the upper edge only being a little rounder than the other. *Pollen-masses* eight, contained in four distinct cells, which on being opened exhibit on either side of the middle partition two pairs of roundish compressed waxy bodies attached to one another by a small elastic membrane.

"The plant requires the same treatment as other Orchidaceæ, thriving pretty well in moss and decayed vegetable mould."

For the above memorandum and accurate description of this quite new species I am indebted to Mr. Booth. The plant is nearly allied to *L. cinnabarina*, but it appears to be of a smaller size, with much more coriaceous leaves; the flowers are a clear pure yellow, and not a brilliant cinnabar colour, and the lateral lobes of the lip are obtuse not acute.

144. ECHEĀNDĬĂ *terniflōră.* Orteg. dec. pl. p. 90 Redout. liliacées, 6. t. 313. (*Conanthera Echeandia.* Pers. syn. 1. 370. Link & Otto Icones plant. rar. t. 3. *Anthericum reflexum.* Cav. ic. iii. t. 241.)

"This singular plant was among a collection received by Sir Charles Lemon, Bart. M.P. in 1837, from Mr. John Rule, Superintendant of the Real del Monte Mines, Mexico, in the neighbourhood of which it is probably a native. It flowered in the greenhouse at Carclew in June 1839, and continued during July and August to send out a succession of five or six flowers daily. It promises to produce seeds by which there is every chance of its being increased.

"*Leaves* radical, sheathing, nearly erect, of a glaucous green, linear-lanceolate acute, from 12 to 18 inches long, and rather more than an inch wide, diminishing to a long narrow point. The middle is somewhat fleshy and channelled; the edges slightly undulated and recurved. The *flower-stem* rises on one side from among the leaves, and attains the height of from three to four feet. It is round and branching, with a long lanceolate, acute, sheathing, pale green bract at the base of each branch. The *flowers* are of a golden yellow, produced in clusters, alternating with one another on the stem, and containing three, sometimes six, flowers in each; issuing singly from among several small brownish ovate acuminate bracteas. Flower *buds* ovate-oblong, pointed at both ends, greenish yellow. When they first make their appearance they are erect, but the day before opening they droop. *Pedicels* of a pale green, about an inch long, round and slender, with a small joint near the base. *Sepals* nearly all of one length; the three outer ones are more pointed, and narrower, than the rest, and have each three greenish veins down the centre. The inner sepals are oblong lanceolate, bluntish at the point, and with the outer ones taper very much towards the base. They are all more or less twisted and rolled back. They open in the morning and remain expanded for about eight or ten hours, after which they gradually close up and decay. *Filaments* short, enlarging outwardly so as to have the appearance of being slightly bearded. *Anthers* oblong, closely connected together, of a deeper yellow than the filaments and tapering towards the point, which is terminated by the style exceeding them a little in length. *Style* round filiform. *Capsule* triangular, nearly erect, roundish-oblong, three celled, with the appearance of having many seeds in each."

For this notice also I am indebted to Mr. Booth. The plant is rather handsome; its rhizoma is tuberous, its stem about two feet high, its flowers a yellowish apricot-colour, and in all respects it has much the aspect of a yellow Asphodel.

145. DICRY̆PTĂ *dīscŏlŏr* (G. Loddiges *mss.*); foliis latis papyraceis subtus discoloribus, labello linguæformi lineâ mediâ elevatâ villosâ, antheræ margine angulisque papillosis.

For this addition to the genus Dicrypta I am indebted to Messrs. Loddiges, who imported it from Demerara. It is remarkable for the deep purple colour of the underside of the leaves, and its lip has a thick villous line running from the base almost to the apex. The flowers are orange-coloured, about the size of those of *D. Baueri*, and the species is altogether handsomer.

146. OCTOMĔRĬĂ *dĭăphănă*; folio ovato convexo acuto, squamis caulis equitantibus superioribus majoribus, floribus solitariis, sepalis petalisque ovatis acutissimis diaphanis, labello tridentato margine subcrispo lineis duabus elevatis.

A small but pretty species of this genus, with white transparent scentless flowers. It is readily known by the form of the leaves, and the large equitant sheaths that invest the upper part of the stem. Imported from Brazil by Messrs. Loddiges.

147. FERNANDĒZĬĂ *lunĭfĕră*; foliis obtusis petalis incurvis falcatis reduplicatis obtusis emarginatis, labelli 5-lobi disco tuberculato laciniis infimis linearibus falcatis petalorum longitudine lateralibus nanis rotundatis intermediâ dilatatâ bilobâ, columnâ a dorso compressâ latiore quam longâ dentatâ, stigmate verticali rimæformi.

A pretty and quite new species, resembling F. elegans in its foliage, but the flowers are thrice as large, and quite differently formed, especially as regards the great extension of a pair of supernumerary lobes situated at the base of the labellum, where they stand erect like two curved horns. It was imported by Messrs. Loddiges from Brazil, where it was first discovered by M. Descourtilz, who in his MSS. states that it grows upon trees, forming tufts of verdure, which from a distance remind one of the box of Europe. It is exceedingly common near Bananal. From the singular form of the lip he called it *Epidendre anthropomorphe*, or the Man Epidendrum, in allusion to the Man Orchis of Europe. Dr. von Martius also found it in woods near Ilheos.

148. MAXILLĀRĬĂ *acutifŏlĭă;* pseudobulbis angustis ovalibus compressis monophyllis, folio oblongo-lanceolato acuminato, pedunculis unifloris radicalibus vaginatis, bracteâ carinatâ ovario longiore, sepalis petalisque oblongis, labello lineari-oblongo retuso emarginato medio pubescente apice glabro utrinque versus basin laciniâ brevi acutâ incurvâ aucto.

A species resembling *M. rufescens*, and having brownish orange flowers with little beauty. In the collection of Messrs. Loddiges from Demerara.

149. ONCĪDĬŪM *Forbĕsĭī;* Hooker in Bot. Mag. t. 3705.

For a specimen of this rare and handsome plant I am indebted to James W. Buller, Esq. of Downes near Exeter, who observes that it resembles Oncidium crispum more than any of the species he has seen, but is much more beautiful, having the petals gaily edged with bright yellow, and some of the sepals barred with the same colour. The plant has a large panicle and very gay appearance. I must however add, that I find the ground colour of the flowers very much browner than in the figure in the Botanical Magazine, in my copy of which it is brick red! The bidentation of the wings of the column is a variable circumstance, but the appendages of the base of the lip are constantly as represented and described by Sir Wm. Hooker.

150. ONCĪDĬŪM *excavātūm;* Sertum Orchidaceum, sub t. 25.

This fine Peruvian plant has flowered with Messrs. Loddiges; it has yellow flowers, spotted with brown, and is easily known by the base of the labellum being very convex, a little hollowed out in front, and excavated with a deep pit on the under side. The petals and lower sepals are much more acute than in my wild specimens from Chachapoyas, and it is probable that the specific character will require modification.

151. CŒLŎGY̆NĒ *elātă;* Genera and Species of Orchidaceous plants, p. 40.

This fine species has lately flowered in the garden of the Horticultural Society, where it had been received from Dr.

Wallich. The leaves are more than a foot long; the scape is terminal upon a large oblong pseudo-bulb, and is terminated by a sheath formed of numerous imbricated bracts, out of which appear eight or nine white flowers, stained with yellow near the point of the lip, and having an unpleasant smell, very like that of the Barberry blossom.

152. BATĀTĀS *betăcĕă*; foliis ovatis cordatis angulatis et subquinquelobis acutis, racemo contracto composito, sepalis acuminatis, tubo corollæ limbo circulari longiore, radice fusiformi sanguineâ.

This is a very handsome twiner, and seems likely to rival *Ipomœa Horsfalliæ*, from which it differs not only in habit, but in the colour of the flowers, which are a very delicate pale violet, with a much deeper purple eye. A drawing of it was sent me in March last by the Rev. J. B. Reade of Clapham, with a letter informing me that it had flowered with his friend Mr. Waterhouse of Halifax, who "states that the root is a tuberous one, and came accidentally among some Orchidaceous plants from Demerara, and possesses the peculiarity of being exactly similar to Beet Root, with the same purplish red colour." Lately I again received a notice of it, with a figure, and the following additional particulars, from Mr. William May, Nurseryman, Ripon, who has it for sale.

"The Gardener to Mr. Waterhouse says that it is a most profuse bloomer, and prefers the cool part of the plant stove; he states that he tried two plants of it, the one at the cool end near the door and farthest from the fire, and the other at the warmest end nearer the fire; in the former of which he finds it succeed much better and bloom much more freely than at the end nearest the fire. From this circumstance he thinks it will be a greenhouse and not a stove plant. Since it has been in my possession I have had it in various temperatures, and find it prefer the greenhouse, where it has plenty of air; but having had it only two months during summer, I am not authorized in saying it is decidedly a greenhouse plant."

153. ODONTOGLŌSSŪM *Clōwĕsĭi*; pseudobulbis ovalibus diphyllis, foliis ensiformibus angustis erectis scapo longioribus, racemo paucifloro corymboso, bracteis minimis setaceis, sepalis petalisque lanceolatis æqualibus, labelli cordati medio constricti apice subrotundo acuto basi lamellis 5 inæqualibus abruptis quincuncialibus aucto.

A very handsome Orchidaceous plant, for which I am indebted to the Rev. John Clowes of Broughton, a most zealous and successful Horticulturist, who received it from the Organ mountains of Brazil a few years since. Its flower-stem is about a foot high, and is terminated by four or five large starry flowers, yellow mottled with brown, while the lip is white with a rich violet base. A drawing of it, by Miss Mearns, will appear shortly in this work.

154. CATASĒTŪM *longifŏlĭūm ;* foliis longissimis gramineis, racemo cylindraceo pendulo multifloro, sepalis ovatis subrotundis petalorum conformium dorso applicitis, labello urceolari a tergo incurvo limbo truncato apiculato intus cercaceo glabro margine fimbriato.

This plant is in several collections where Demerara Orchidaceæ are grown, and is known as the long-leaved Catesetum which never flowers. It has however at last yielded to the good management of Valentine Morris, Esq. of the Retreat, Battersea, where it has produced its blossoms abundantly. It is too large a plant to suit the pages of the Botanical Register, and will therefore appear in the 7th fasciculus of the Sertum Orchidaceum, now in preparation. The flowers are bright orange, a little bordered with violet, and appear in a drooping raceme, over which they are closely packed for the length of a foot or more ; they are extremely beautiful, and the species is beyond all comparison the handsomest of its genus.

155. PLEUROTHĀLLĬS *scābrĭpes ;* folio lineari-lanceolato apice tridentato caule longiore, vaginâ pilosâ caulis medium subæquante, flore solitario pubescente, ovario tomentoso, sepalis quam petala triplo-longioribus acutis lateralibus connatis, labello spathulato rotundato.

A curious little plant, transmitted to me by Mr. Booth with the following note.

" For specimens of this singular plant I am indebted to Michael Williams, Esq. of Trevince, who informed me that he received it in 1837, with some other Brazilian plants, from Lieut. Downey of H. M. Packet establishment at Falmouth, and that it has been successfully cultivated in a shaded part of the stove, attached to a small bit of wood, and kept very moist.

" The whole plant does not exceed five inches in height. The *stem*, which is one-leaved, is about two inches long, hard and round, with a groove on one side, and having for half its length a thin, pubescent, brownish covering, thickly marked with darker spots. *Leaves* upright, from two to three inches long, lanceolate acute, thick and leathery, nearly flat, of a deep green above, a little paler beneath, and somewhat rusty. *Flowers* one or two, very small, of a dull dingy yellow, striated with reddish purple lines, and issuing from a thin, keel-shaped, acute, brownish, spotted spathe at the base of the leaf. *Pedicels* short and round, nearly sessile, with a small acuminate, spotted bractea. *Sepals* two, the upper one slightly arched, lanceolate acute; the lower one similar to the other, but rather larger and more hollowed at the base. *Petals* ovate, acuminate, thin, and shining, striated like the sepals, and about half their length. *Labellum* dull reddish purple, a little longer than the petals, spathulate, and rounded at the point. *Column* very short, nearly concealed by the upper sepal and the two petals which support it on either side."

THE END.

NORMAN AND SKEEN, PRINTERS, MAIDEN LANE, COVENT GARDEN.

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